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I.

OBSERVATIONS on NAVIGABLE CANALS. *Communicated to the Editors of the American Medical and Philosophical Register. By an OBSERVER.*

THE public attention, for several years past, has been chiefly engaged by turnpike roads, as the means of conveying produce to market, whence it is suspected that many of our fellow-citizens have not fully considered the great and solid advantages that would be derived, especially in this state, from navigable canals.

It may be taken for a general rule, that canals abound, in different governments, in direct proportion to the industry, economy, and wealth of the inhabitants. Not that wealth begets canals, but canals are the natural ef-

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fect of economy and industry, which never fail to beget wealth. It is known, by every man who has travelled in Europe, that Holland abounds in canals. No heavy loads, in that government, are conveyed in waggons ; every thing is transported by water. But we know that the Dutch have been proverbially rich. Few, very few of us have ever seen the empire of China, but we know perfectly well that China, in all directions, is scarified by navigable canals. China is not, as some people imagine, a perfect plain. But there are canals in that empire, notwithstanding the hills, seven or eight hundred miles long. That ancient and prudent nation have discovered that the transportation of produce by horses is very expensive and would effectually check their prosperity. It is known that China, by economy of this kind, maintains more inhabitants than any other government on the face of the earth, upon the like number of acres. Peter, the emperor of Russia, one of the greatest men recorded in history, is known to have civilized a nation who were nearly savage. This he did by introducing commerce and learning among his subjects. Imitating the wise policy of the Chinese, he projected navigable canals through every part of his empire. Part of that great and useful work was executed in his life time, the remainder has been diligently prosecuted by his successors. A large boat may now pass from the Caspian to the Baltic ; a distance of one thousand three hundred and thirty-four miles, without unloading any part of her cargo. Boats may also pass, by rivers and canals, from the White sea to Petersburg ; or to the Caspian sea. And they may pass by the river Memel in the Baltic or by the Duna and then by certain canals into the Don or Dniester, and by those rivers into the Black sea ; or turning to the northward, after they have left

the Memel or the Duna, they may pass by other canals and rivers into the Caspian sea. By the means of this internal navigation Russia is become a great commercial empire ; its inhabitants are civilized, and fourteen or fifteen hundred ships, of foreign nations, are loaded every year with its produce.

It is within the memory of man that the first navigable canal was dug in England ; a country that was supposed to be sufficiently improved. But canals are now become numerous in that kingdom, and the subjects have discovered that their former means of transporting produce had been improper and very expensive.

The Spaniards, an indolent nation, who are therefore among the hindmost, in every useful improvement ; whose wealth for ages, has not been the effect of personal industry or economy, have lately attempted some navigable canals. But those canals, projected by pride and not by prudence, were begun upon too large a scale, and being too expensive, they were soon deserted.

Some canals there are, in other countries, larger than those in Spain, but they have been formed for a different purpose. They were intended for conveying shipping from one sea to another ; not for the purpose of carrying produce to a shipping port. The canal of Languedoc, projected by Lewis the 14th, is of this kind. The Holstein canal, begun in the year 1777, and finished in 1785, is also of this kind. It is one hundred feet wide at the top, fifty-four feet wide at the bottom, and not less than ten feet deep in any part. Ships drawing nine feet four inches water may pass through it. Vessels pass by that

canal from the German ocean, in the vicinity of Tonnin-gen, into the Baltic. From two to three thousand ships have passed through it one year. The expense of the canal and locks was a little more than one million and a half of dollars. The canal in Scotland, that passes from the river Forth to the Clyde, though projected on a much smaller scale, was also intended for the passage of sea vessels. There is a canal in Sweden, not yet finished, whose object is to convey ships from the Baltic to the Categate, near Gottenburg, without passing the sound. Part of this canal is cut through a solid rock of granite, above seventy feet deep, at a great expense. The canal proposed to be cut in this state, will not be attended with difficulties or expences such as occurred in forming any of the canals last mentioned. But it will be infinitely more profitable to the community than any canal hitherto formed, in any country; some of the canals in China and Russia excepted. It must be much more profitable than any canal in England, Scotland, Holland or Flanders, because no spot of land, in either of those countries, can be very far from the Sea, or from a navigable water.

The object of the canal to which I refer is to convey small craft from the tide water in Hudson river by the course of the Mohawk, Wood creek, Oneida lake and Seneka river across the Genessee river, and then by the Cataragus or Tanawanda creek into lake Erie. This is stated as the general bearing of the canal. But it is not to be understood that I would in all cases take the bed of a river as a cheaper or better mode of conveying produce than by canals near the river. On the contrary, I know that a canal supplied by the river, in many cases is greatly to be preferred to the natural bed of the stream.

By means of such canal we should preserve the commerce of our own citizens, we should render their lands valuable by doubling or trebling their produce, and we should command the commerce of the great western country, without a rival, except the state of Pennsylvania.

It is well known that there is not a single river in the Atlantic states that passes through the Allegany mountain, or the great chain of ridges, called the Appalachian mountain, except the Susquehannah and Hudson. Hence it follows, that no state in the union, except Pennsylvania and New-York, can bring produce by water from the western country; for no canal can be made across the mountains that are about three thousand feet high. We say nothing about the trouble and expence of making six hundred locks, viz. three hundred on each side of the mountain; since there would not be a proper supply of water on the tops. In this rivalry, it is conceived that New-York has considerably the advantage of Pennsylvania. We admit that the navigation of the Susquehannah, in the upper part of that river, is much better than the navigation of the Mohawk. If the bed of the river should be used, for that river is deeper and less incommoded by rocks and ripples. But the lower part of the Susquehannah is frightfully dangerous, nor is it possible, in some places, to desert the bed of the river, by running a canal along its bank. On the contrary, the navigation of the Hudson river, below the Mohawk, is delightful, and the Mohawk itself, by removing rocks and by the help of a few canals along its bank, may be made navigable with safety and ease. After we have attained the highest ground, at the head of the Mohawk, all difficulties vanish. There is no scarcity of water upon the summit level, and the naviga-

tion of Wood creek may be exchanged, at a small expense for a canal. The internal navigation from Oneida lake, by rivers and canals, to lake Erie, may be effected as we are told, without much difficulty. Nature has already done about half of the work by the Seneka river and one of its branches. But here is a canal to be dug, of considerable length, between the waters of Seneka river and those that discharge themselves into lake Erie. There is no mountain in the way.

The water in lake Erie is about two hundred and seventy feet higher than the water in the Oneida lake. This does not indicate a great number of intermediate locks, whatever need there may be of locks in crossing rivulets or small ridges. It will be observed, that I contemplate the running a canal entirely through our own state, without visiting lake Ontario. I have seen more projects than one, for improving our navigation, by forming a canal from Oneida lake to lake Ontario, and then by opening a canal that, passing the falls of Niagara, shall connect lake Ontario with lake Erie. The project may certainly be executed, but I never could discover the policy of that measure. We know that the river St. Lawrence is navigated at present with boats, and the navigation of that river, at a moderate expense, may be made perfectly safe. Is it contemplated to make the subjects of another government our chief carriers? If our produce once gets into lake Ontario, I deem it certain that it will never return to the United States. Is it not recollect that the carrier of produce, in every case, has prospered, whatever the case of the seller or the buyer may have been. What was it that created and enriched the cities of Tyre and Palmyra, Alexandria, Venice, and Amsterdam? It was

not any thing made by the inhabitants, or produced in their vicinity. It was the profits of a carrying trade ; a trade that has never failed to enrich the parties interested.

I am aware that a great proportion of our fellow citizens, who live in the north-eastern part of this state, find it their interest at present to carry their produce to Montreal ; but if a canal should be cut from the Oneida lake into the Ontario, by way of Salmon creek or Salmon river, the case would not be altered. It may be alleged that such a canal would accommodate the inhabitants on the waters of Black river, but I deem it certain that whenever those people have conducted their produce to lake Ontario, they will take it directly to Montreal, instead of taking it, by many locks and canals, to Albany. I repeat the former observation, that every bushel of wheat that shall once be afloat upon lake Ontario, must be expected to be landed in Montreal.

It will probably be said, that the river St. Lawrence is unfriendly to commerce, for it is frozen five or six months in the year ; but the river Mohawk, and the adjoining canals, must also be frozen several months every year. The general process, as I presume, will be as follows : The farmer will clean his wheat in the winter, and carry it to the side of a lake, river or canal, from which it may be taken to market, when the waters are clear from ice. The river St. Lawrence will be clear to Montreal full as soon as the canals are clear. Therefore the wheat will go by the cheapest passage. The market price at Montreal will not be depressed by the want of shipping to carry off the produce, nor by the want of capital, for houses in England will have their factors there.

Perhaps it will be said, that boats fit for common canals cannot live upon the lakes, therefore, produce that comes from lake Huron, or from the upper end of lake Erie, will be transported in large sloops; but the canal to be cut by the falls of Niagara may be fitted for such sloops, in which case they may pass on to the east end of lake Ontario. Such would doubtless be the case, but we should gain nothing, that I can discover, by the sloop navigation of Ontario, since it is certain that the river Mohawk can never be fitted for any thing above boat navigation. For this reason the produce, in one place or another, must be transferred from the sloops into boats, and I conceive that the change had best be made at the east end of lake Erie.

For the reasons stated, I take for granted that our legislature will cause the navigable canal to be conducted through their own territory. It will naturally run a little to the northward of the middle ground.

Let us try to calculate the real value of such a canal, or how much our fellow-citizens would save by it. The average breadth of our state, the western part of it, is about ninety miles, and its length from Wood creek to the western boundary is on a medium one hundred and sixty miles. In this case, if the canal should pass through the middle ground, the mean distance of each farm from the canal would not exceed twenty-three miles.

The length and breadth mentioned gives nine millions, two hundred and sixteen thousand acres of land, which will give forty-six thousand and eighty farms, each containing two hundred acres. The several owners of those

farms may be expected to raise, one with another, one hundred bushels of wheat for sale, every year, or other marketable produce of the like value. This implies four millions six hundred and eight thousand bushels of wheat for sale every year. I presume the medium price of wheat, at tide water, on the Hudson, may be stated at one dollar and a quarter. According to this estimate, when all the new lands in this state are settled, and properly cultivated, the produce of one kind or another that is ready for market every year will be worth five millions seven hundred and sixty thousand dollars. Whoever takes the trouble to examine will find that the distance to be travelled, from the several farms, within the bounds mentioned, one with another, to tide water on the Hudson, is at least one hundred and fifty miles. Suppose this travelling to be on a turnpike road, it is ascertained that wheat cannot be carried, upon such road, at less than forty-five cents per bushel, for one hundred miles, or sixty-seven cents for one hundred and fifty miles, the medium distance to market. In this estimate I am guided by the prices now paid, on good turnpike roads, in Pennsylvania. The price stated is a heavy tax upon the farmer; more than half the value of his crop. It amounts to three millions, eighty-seven thousand, three hundred and sixty dollars. Let us consider the amount of the losses that the farmers in general, or the public, would sustain by taking such wheat, or other produce, to market in wagons. A wagon, as I presume, with four horses, would carry fifty bushels of wheat to market. The several trips, going and coming three hundred miles, good weather and bad weather included, may be performed in a fortnight; or twenty-five trips in the year. At this rate, three thousand six hundred and eighty-six wagons would be employed all

the year in taking the wheat to market. The wagon and four horses may be valued at four hundred dollars; the whole value, one million, four hundred and seventy-four thousand, four hundred dollars. A wagon and team, in constant service, cannot be supposed to last more than eight years. But the consumption of one million, four hundred and seventy-four thousand, four hundred dollars, in eight years, implies the loss of one hundred and eighty-four thousand three hundred dollars every year in horses and wagons, beside the vast quantity of grain that must be consumed by fourteen thousand seven hundred and forty-four horses. Each team of horses must consume at least one bushel of oats per day, which, valued at twenty-five cents, amounts to one million, three hundred and forty five thousand, three hundred and ninety dollars per annum for the whole. I am yet to take some account of three thousand six hundred and eighty-six men in perfect health, who, instead of raising provisions on a farm, are employed the whole year in cracking wagon whips on the road. Their wages and provisions cannot be stated at less by the year than two hundred and forty-four dollars each man. This comes to eight hundred and ninety-nine thousand two hundred and eighty-four dollars for the support of wagoners. If the produce should come to market by canals, it could not, in the case of good management, cost more than a fourth part of the necessary cost when brought by wagons. It would not employ more than a fourth part of the number of labourers. The wear of boats would not be equal to a fourth part of the wear of wagons; and nine-tenths of the vast expense of horses would be saved. The annual difference in those two modes of taking the produce to market would be about one million, eight hundred and twenty-one thousand, seven hundred and thirty dollars.

It will probably be said, that the above calculation is extravagant beyond measure, for it supposes more than ten times the quantity of wheat that has ever been raised in that part of the state, in one year. This objection for the present is perfectly correct, but the reader will be pleased to consider that I do not calculate for the present year. I do not calculate for the scattered inhabitants of a wilderness; for people who have done little more than erect shelters for their families, and raise a little grain for their support. I look forward to a period when every part of that wilderness will be laid off into farms, and settled with industrious yeomanry; a period that will arrive before thirty years have finished their course. The object of a wise legislature is to promote industry and virtue in the state; but we know that people who live far from market, and cannot sell their produce, naturally become indolent and vicious. Having little to do, they do less. It is the hope of reward that promotes industry; without such hope, men become savages. There are people in the western country, settled on a bountiful soil, who do not raise a bushel of grain except what is eaten by the family, or what is made into whiskey, for the purpose of drowning thought, and destroying soul and body. By the help of a navigable canal through the western country, our fellow citizens there would be removed, as it were, towards the coast; their lands would be doubled or trebled in value; they would be industrious, because they would enjoy the fruit of their labour. The lands would be well cultivated, and the inhabitants well instructed. We shall be guilty of a criminal neglect if we do not furnish those people with the means of sending their produce to market. Beside the duty that we owe to a rising generation, the duty of promoting industry and guarding their

morals ; it is obvious that sound policy, on other accounts, demands, with an imperious call, that we should promote internal navigation. The waters of the Mississippi are found to be an impracticable conveyance for foreign supplies to the western country. Some channel must be formed by which foreign goods and domestic produce may be conveyed to and from the western settlements. It remains to be determined whether that channel will pass through the state of Pennsylvania or New-York. Such a channel of conveyance might be made by the inhabitants of Canada on easy terms. The river St. Lawrence may be cleared without much trouble, and they have only to pass the falls of Niagara by a navigable canal. But they are provincials, and a mixed people, circumstances that are unfriendly to such exertions. The legislature of Pennsylvania has shewn a liberal spirit in promoting roads and canals. They will doubtless make the north-east branch of the river Susquehannah a safe and cheap channel for the conveyance of produce from the head of that river, in which case they will carry off the produce, and secure the commerce of a considerable part of this state. They will do more ; they will not fail to form a navigable passage to lake Erie. The western branch of the Susquehannah passes through the Allegany ridge, and there are not many dangerous falls or ripples on that branch. It will be practicable to make a navigable canal from the west branch into the waters of the Allegany river, and thence into lake Erie. But it would be a tedious navigation, for some of the channels through which it must pass are very crooked. Hence it will follow, that if we had effected a canal navigation into lake Erie, we should continue, in all probability, to enjoy the carrying trade without a competitor. It is pretty

clear, that whoever carries the produce that goes to market from the east end of lake Erie, must also be the carrier of a great part of the produce of that fertile country that extends westward to the Illinois river. There is no manner of difficulty in passing from lake Erie to lake Huron, upon which a settlement will be formed before time shall have covered the heads of our children with gray hairs.

I am aware that the canal I have recommended will be objected to as a greater work than any thing that has been attempted in the United States ; as a measure that would be attended with great expense. But the reader will be pleased to consider that there are few places on the face of the earth where a canal can produce such great and profitable effects. There are not many places on the face of this globe, in which a great and fertile country is so completely cut off from navigable waters, as the country of which I have been speaking. I do not urge the propriety of such canal because it would be the means of bringing wealth and prosperity to the city of New-York ; for this city, from its happy situation, must prosper without the benefit of canals. But such a canal would be the means of preserving knowledge and civilization in the western country ; it would be the means of bringing prosperity and comfort to millions yet unborn ; and it would promote and bring into existence an immense quantity of valuable produce, that otherwise would never see the light.

If the reader conceives that my calculations are visionary and extravagant ; if he thinks that a farmer, on good land, instead of raising one hundred bushels of wheat, will only raise ten bushels for market ; let him take his

pen and cut down every other article according to the same scale. Let him make the western people, in his imagination, as idle and dronish as he pleases, still he will find that the proposed canal would bring the state an ample reward. The tenth part of the sum above-mentioned is one hundred and eighty-two thousand one hundred and seventy-three dollars. And it will be admitted that one hundred and eighty-two thousand one hundred and seventy-three dollars per annum have a sufficient claim upon legislative attention.

AN OBSERVER.

Annexed is a small sketch of the country through which the canal is proposed to pass.

- A. The head of the Mohawk.
- B. Wood creek.
- C. Oneida lake.
- D. Seneka river.
- E. Mud creek.
- F. Genessee river.
- G. Allen's creek.
- H. Tanawanda creek.
- I. Buffalo creek.
- K. Cateragus creek.
- L. Susquehannah river.
- M. Allegany river.
- P. Pennsylvania N. boundary.
- S. Seneka lake.

P. S. Observing that the legislature of this state had turned their attention to the subject of internal navigation, I presumed that it would not be improper to shew, by plain calculations, the vast superiority of navigable ca-

nals to common land carriage, for the conveyance of produce. The calculations and remarks were intended for the citizens of this state, in particular, to whom, as a fellow-citizen, I owe certain duties. But it is obvious that the canal I have recommended has very urgent claims upon the attention of the United States. Claims that will force attention, if it is not freely paid. It has been questioned, not without reason, whether congress are vested with authority to expend the national treasure in making and repairing roads in the several states. But no man has alleged that congress has not a right to sell the vacant lands of the nation; nor has it been alleged that they should not employ the best means of bringing those lands to a good market. If they had a large tract of drowned lands, not saleable, they might, with propriety, expend twenty thousand dollars in draining those lands, provided the lands, when drained, would certainly bring them forty thousand. Now it is absolutely certain that if congress and the state of New-York, that has a particular interest, should open the proposed canal, the public lands would not only be doubled in value, and the sale of them be expedited, but people who are indebted to the treasury for lands already sold, would be enabled to pay debts, to a great amount, which otherwise are at least very doubtful. If there should arise in the western country, a great body of people, loaded with a heavy debt to the United States, which they could not discharge, the integrity of the union would be greatly endangered by the circumstance.

II.

A REVIEW of the DOCTRINE OF DISEASES, taught at present by BENJAMIN RUSH, M. D. Professor of the Institutes and Practice of Medicine, &c. in the University of Pennsylvania.—Continued from page 60, and concluded.

OF THE PROXIMATE CAUSE.

In his account of the phenomina and proximate cause of fever, Dr. Rush says, fever is a modification of disease which has its seat in the blood vessels and consists in “an irregular action or convulsion of the arteries,” and that this convulsion is the proximate cause of fever. This is the same as if he had said, fever and its proximate cause are one and the same. This is a violation of the rules of logic, which lays it down as a maxim that cause and effect are never to be identified. The irregular action in which he says fever consists, cannot be the proximate cause of fever, otherwise it would be the cause of itself. If that were possible, every event that occurs in the universe might be the cause of its own existence, which is contrary to experience and therefore inadmissible.

The proximate cause is that cause which is nearest to an effect, and in medical language means that condition or circumstance on which disease or a deviation from health directly depends, and which necessarily ceases to exist upon the removal of that condition or circumstance. If, therefore, the theory taught by Dr. Rush were true, and he reasoned consistently with the principles which he has

adopted, he ought not, in my opinion, to consider the convulsion of the arteries to be the proximate cause, but the excitability accumulated in the fibres of the arteries, for by his own doctrine, the convulsion of the arteries, is occasioned by the stimulus of the circulating blood upon their redundant excitability.

If irregular action were the proximate cause of diseases in general, and of fever in particular, blood-letting would cure the disease, when the excitement is too high, or the irregular action too strong, or when the excitement is too low. Because so long as the arteries retained a surplus of excitability, and the blood continued to circulate, it would produce irregular action, or a convulsive motion. For as emptying part of the water boiling in a pot, will not render what remains cooler, so long as the fuel which occasions its heat continues to burn, though its heat may be diminished by adding water of a colder temperature to it, so bleeding, on the principles of this doctrine, could not diminish the temperature of the animal body, so long as the surplus of excitability or the causes of its accumulation remained undiminished. Blood-letting, however, does afford relief when the excitement is to excess or the irregular action very strong, and therefore furnishes incontestible evidence of the fallacy and imperfection of this doctrine.

But as the most certain method of discovering the truth of any theory or doctrine, is to subject it to the test of experiment, let us enquire how this doctrine agrees with practice.

The scurvy, which is confessedly brought on by gradually debilitating powers, if its proximate cause were irregular action, or redundant excitability, should be cured by the application of stimuli of sufficient strength to exhaust the system of the surplus of excitability; but this treatment is not found to cure the disease; whereas a plentiful supply of the juices of sub-acid vegetables, and particularly of lemons and oranges, seldom fails. This being a notorious fact, furnishes another proof of the fallacy and imperfection of this doctrine.

If febrile diseases were capable of being cured by having their surplus of excitability transferred by means of a mercurial salivation from the arteries to the glandular or lymphatic portion of the system, and all diseases depend upon the same proximate cause, differing only in the circumstance of being seated in different portions of the system, and in the degree or force of irregular action, as the doctrine under review teaches, what portion of the system does scurvy occupy, that mercury not only fails in curing it, but when exhibited in a late stage of the disease, as well as in a late stage of malignant fever, forces out life in rapid streams?

Tetanus, which has its seat in the muscular portion of the system, and which, according to this doctrine, has the very same proximate cause as fever and every other idiopathic disease, and in which, in the language of electricians, the excitability is *plus*, while it is *minus* in the blood vessels; if this doctrine were true, would require precisely the same remedies as fever. But the remedies which Dr. Rush acknowledges to be most efficacious in this disease, are in direct contrast with

those which he advises in the cure of fever, particularly in that form which he calls malignant. But as the practice to which this doctrine leads, never succeeds, if the theory of curing one disease by producing another of stronger action, or of transferring the surplus of excitability from one portion of the system to another and thereby adjusting it to the force of the customary stimuli, was substantiated, a disease might be produced in the blood-vessels more powerful than that existing in the muscles, by first subjecting the patient to a very low temperature, for the purpose of debilitating the arterial portion of the system, and thereby permitting the excitability to accumulate in the arteries, so as to exceed that in the muscles, in aid of which fasting and immoderate evacuations might be added, after which, the application of great heat and other powerful stimuli, would produce such powerful action in the arteries, and such high excitement in that portion of the system, as would counteract the excitement of the muscles, and transfer the surplus of their excitability to the parts more highly excited.

To render the effect of the usual diffusible stimuli more certain, blisters and a salivation might be superadded, as they have, in Dr. Rush's opinion, the effect of collecting and concentrating scattered and painful sensations and carrying them out of the system. This opinion is expressed in his treatise on the gout.

If, however, the muscles in cases of tetanus contain a greater quantity of excitability, comparatively, than the arteries, and we were to attempt to transfer the surplus from the former to the latter, by means of stimuli, for the purpose of *balancing* these two different portions of the sys-

tem, we should be very much disappointed, for the agents that would stimulate and increase the action of the arteri- ties would stimulate the muscles in a proportionable de- gree at the same time, hence the relative disproportion of the excitability in the different parts of the system would remain the same as if no stimuli had been applied.

This doctrine, therefore, not being calculated to serve as a guide to practice must be not only useless, but perni- cious, in proportion to the tendency it has to confuse and mislead, and, with the doctrine of Brown, of which it is a supplement and commentary, "ought for the good of mankind to be consigned to the tomb of all the Capulets." For though men of enthusiastic dispositions and fertile imaginations, who only study the principles and maxims of medical science as an amusement, or to gratify curio- sity, without any view of applying their speculations to practice, may be allowed to gratify themselves with extra- vagant hypotheses and conjectures, yet when the lives of their fellow-creatures are concerned, I cannot think any theory that has not been fully confirmed by experience, ought to be taught and recommended as a guide to prac- tice from the chair of a professor. In his defence of blood-letting, the professor of the institutes and practice of medicine, has asserted, that a discoloured state of the blood in malignant fevers, is a sign of the highest degree of excitement and activity in the blood-vessels ; and that its dissolved state is owing to the immoderate action of the blood-vessels upon it, which "tear and rend it to pieces."

To prove the doctor's mistake with respect to the cause of this condition of the blood, those who have had oppor-

tunities of examining and comparing the blood drawn in the latter stage of phrenitis, pleurisy, or enteritis, with that drawn in the same stage of a malignant fever, may be appealed to, for they know that in the diseases first mentioned, the blood separates into serum and crassamentum, and the crassamentum when cool, is almost always covered with a thick, tough, white or buff-coloured coat, resembling size or glue, whereas in the late stage of a malignant fever the blood continues uniformly fluid, and resembles dark-coloured, bloody water, though in the former diseases the force and action of the arteries are evidently much stronger than in any case of malignant fever.

In proof of the harmless effects of blood-letting, Dr. Rush has quoted several instances from different authors, and among others from the ingenious and illustrious Haller, of persons who had lost more blood by means of the lancet, in the course of the very few weeks than the human body ever contains at one time ; for the circulating fluids in a man of common size, do not exceed 25lb. or 400 ounces. But the cases collected and mentioned by Dr. Rush being rare and extraordinary, only prove that some persons have such extraordinary constitutions, that they can bear losses of blood with impunity that would be fatal to others ; as some persons can bear a quantity of opium or of ardent spirits that would be destruction to the generality of mankind. To argue, therefore, that blood-letting is a safe and necessary remedy in malignant fevers, because some persons have recovered after its operation, without taking into the account the multitude that have been injured by it, is no better proof of its being an efficacious remedy in such a disease, than the circumstance of some persons having recovered from an inflammation of the

lungs or from a fracture of the skull without blood-letting, proves the safety or propriety of such omission, or than the recovery of some persons from the small-pox, by the use of the hot regimen, proves that method of treatment to be preferable to the cold regimen.

The doctor's partiality for novel and singular sentiments and opinions appears to have led him to advance some very extraordinary paradoxes in his writings ; of which the following may serve as specimens.

In his observations on *phthisis pulmonalis*, he says, the inability of the patient to bear a remedy, serves only to demonstrate, (i. e. to prove with mathematical certainty) the necessity and advantage of such remedy.

In his treatise on tetanus (vol. 1. p. 336, edition 3d) he says, "in general, this disease is so completely *insulated* in the muscles, and the arteries are so far below their *par of excitement* or force, that little benefit can be expected from bleeding." The disease in these cases seems to call for an elevation instead of a diminution of the excitement of the blood-vessels. But, he adds, "perhaps bleeding *ad deliquium animi* might so far relax the muscles, as to enable the blood-vessels and other parts of the body to abstract from them their agreeable and natural portions of excitement." And by way of encouraging such an experiment, he gravely tells the reader, that "it is certain that the muscles of a horse affected with tetanus, become *relaxed*, the instant he dies."!

If the utility of remedies were to be estimated according to the inability of patients to bear them in other dis-

cases as the doctor says they ought to be, in cases of consumption, strong emetics would be the best remedies in gastritis and vomiting of blood ; and copious blood-letting in chronic asthma and flatulent colic, and mercury in scurvy.

If such a rule as this was universally adopted, there would be no necessity for the mad ambition of an Alexander, or a Cæsar to thin the ranks of mankind, and prevent the world from being incumbered by a population too numerous for the means of subsistence, without which, or some public calamity, such as the devastations of plague or famine, according to the speculative calculations of Mr. Malthus, a great portion of the human race would be under the inhuman necessity of becoming canibals in their own defence.

To conclude. The doctrine taught at present by doctor Rush is not only calculated to reduce the exalted science of medicine (which has the noblest and most interesting objects for its end) to the degraded condition of a conjectural and uncertain art, but it may at least be questioned if it is not calculated to aid the cause of infidelity, and to enlarge the sphere of moral depravity, inasmuch as it appears to inculcate that the soul of man is *mortal*, and perishes with his body. For if life is a forced state, as Dr. Rush (adopting the opinion of Dr. Brown) maintains in his lectures on animal life, published in the first volume of the third and last edition of his Medical Enquiries, or is only the effect or product of stimuli upon the organs of sense and motion ; and "thought," as he asserts, "is as much the effect of stimuli upon the organs of sense and motion as any other phenomena of

life ;" and as no effect can survive its cause, thought, or the operations of the mind, must necessarily cease when the organs of sense and motion, upon which they depend for their temporary existence, lose the capacity of being acted upon by stimulating agents.

As this is the true and legitimate induction from this doctrine, it would be in vain for its advocates to pretend to deny what necessarily flows from its principles.

As the conduct and practice of every person is governed more or less by the theory which he embraces on medical as well as theological subjects, and as false theories have done irreparable injury to society in all ages, the opinion which the *Reviewer* entertains of the dangerous tendency of the doctrine on which he has animadverted in the preceding strictures is his inducement for thus pointing out what appears to him to be some of its most dangerous errors and imperfections, and he hopes will be considered, not only by physicians in general, but by the doctor himself, as a sufficient apology for the freedom with which he has treated it, especially as there are but few things of more importance, or more to be desired in this world, than the establishment of truth, on a subject which has the safety and welfare of mankind for its object.

III.

*A singular case of the spontaneous and sudden cure of
DROPSY of the lower extremities. Communicated by
WILLIAM MOORE, M. D. Vice-President of the Me-
dical Society of the County of New-York.*

New-York, August 31st, 1810.

DEAR SIR,

THE case of a spontaneous cure of partial -anasarca, which I mentioned to you, and which you was kind enough to request me to send you, I find recorded nearly in these words : " Mrs. S.— during the latter months of her first pregnancy, became extremely unwieldy and uncomfortable from the great size of the uterus, and the enormous distension of her lower extremities. She could not walk without the greatest difficulty, and was quite unable to turn herself in bed. A few days previous to her delivery, her feet, legs and thighs, became so swoln, and the skin so pale, tense, and transparent, that they resembled sacks of water. Indeed, the swelling and tension were so great, that it was seriously apprehended, the skin of her feet or ancles would burst. Fortunately for her, her labour came on, and she was happily delivered, May 26th, 1794, of two fine boys. Both children presented naturally, and were expelled by the labour pains, as were also, in due time, the placentæ. The mother was bandaged up and left tolerably comfortable. In a few hours after her delivery she began to complain of pain in the lower part of the abdomen, which was not attended to at first, as it was thought to be after-pains ; but it very soon increased to such a degree as to become

almost intolerable, and was attended with great swelling and tension of the part. Upon examination it was discovered that a considerable absorption had taken place in the lower extremities, as the skin was not near so tense as before delivery ; and that a great quantity of urine had been secreted, as the bladder was very much distended and extremely sore to the touch. As she had passed but very little water naturally, the catheter was immediately introduced, and upwards of two quarts were evacuated at once. This operation was performed sixteen times in the course of the ensuing week. On the third day after delivery, she passed, by means of the catheter, thirteen pounds and a half of urine.

“ Finding it troublesome to introduce the catheter so frequently, and wishing to devise some method of keeping the bladder empty, that it might have an opportunity of recovering its tone, it was determined to introduce a flexible male catheter, composed of gum-elastic, and fasten it to her thigh. This was done in the evening, and it was left in all night ; in the morning she was found perfectly deluged ; the water had run all through her bedding and was extending itself over the floor. This expedient had the desired effect, for the swelling seemed to melt away like a snow-ball in the sun : at the end of a week it had entirely subsided, her urine was diminished in quantity, her bladder had recovered its tone, and she passed her water without assistance. She very soon recovered, and both her children did well.”

Thus you see, sir, that the little industrious absorbents, went to work with great alacrity as soon as the embargo

was taken off, and the port opened to give a free egress to the proceeds of their labour.

I am yours, &c.

WM. MOORE.

Doctor DAVID HOSACK.

IV.

A DISSERTATION on the effects of a poison of Java called UPAS TIEUTE, and also on the NUX VOMICA, the BEAN of ST. IGNACE, the STRYCHNOS POTATORUM, and the VONTAC APPLE, (la pomme de Vontac,) being all of the same genus of plants as the Upas Tieuté. Extracted from a memoir presented to the faculty of Medicine of Paris, on the 6th of July, 1809, by M. DELILE, of the Institute of Egypt, Doctor of Medicine, &c. Communicated by the author to Dr. D. HOSACK, of New-York.

EXPERIMENTS made with poisons on animals, are the most effectual means of discovering what are the particular functions which suffer most from their various deleterious actions, and also of ascertaining the vital powers most capable of resisting the irritating causes.

The poisons which M. Delile has made use of in his experiments are very active and produce tetanus, a disorder often fatal, and which is known to be frequently occasioned by very different causes.

Upas Tieuté is the name of a poison called also Bohon Upas, a denomination which has been rectified by M.

Leschenault. During his residence in Java, this gentleman, who was one of the Savants, and naturalist and geographer of a naval expedition, was fortunate enough to see the upas gathered, and was the first who brought it to France. Until this time a number of strange stories had prevailed respecting the upas. The poison is a juice extracted from the roots of a small creeping shrub of the order or family of the *strychnos*.

To prove the phenomena of poisoning with the upas, M. Delile in concert with M. Magendie, prosector to the faculty of medicine at Paris, made a variety of experiments on living animals. Many of them were wounded with pointed pieces of wood which were imbued with the upas in the same manner as arrows are poisoned.

Fifteen grains of the upas in its dried state, killed a horse stabbed with it in the thigh, and a grain, or half a grain, applied in the same manner, was found sufficient to destroy a dog.

To prove mortal, the upas must remain a certain time in the wound. It has no effect if drawn out immediately after its introduction ; and is perfectly harmless when applied in a liquid state by drops, unless injected through the cellular membrane into the flesh.

Animals wounded with the upas are seized with tetanus a few minutes afterwards. Its operation is more or less rapid, according to the age or size of the animal and the quantity of the poison. There is generally a remission after the first attack of tetanus, which is succeeded by repeated attacks which do not in the least affect either

the hearing or the sight: but respiration becomes extremely difficult; the muscles drawn tight over the thorax keep it immovable, and death succeeds by asphyxia.

The tetanus depends on the irritation of the spinal marrow, which the upas, dissolved and absorbed in the wound, produces. If the spinal marrow be divided transversely near the occiput, the tetanus occasioned by the upas, continues; but ceases immediately when the spinal marrow in the vertebral canal, is destroyed.

If the upas is applied to the spinal marrow in a place cut cross-ways, the tetanus succeeds instantaneously. If it is applied to a nerve only, it produces no effect. Injected into the veins or arteries, it acts very rapidly.

The upas diffused in water and injected into the serous cavities, such for example, as those of the heart or the lower regions of the belly, is quickly absorbed, and the animals die of tetanus and asphyxia.

All the mucous surfaces are capable of absorbing the poison. If given with the common aliments, or injected into the rectum, vagina, or bladder, it infallibly brings on tetanus, unless the dose be extremely small. Applied to the conjunctive nerve, it produces the same effect.

When taken into the stomach, a greater quantity is required to kill an animal, than when applied to a wound. On the eyes this poison has no effect, unless used in large quantities.

The upas acts by absorption, and through the medium

of the blood which is impregnated with it. It has been applied to parts almost entirely separated from the body of an animal, and which had no means of communication left, but by an artery and a vein. In the first experiment made on a dog, a few drops of upas were enclosed between ligatures in a cavity of the intestines divided from the mesentery, and having no other connexion with it, than by a vein and artery.

In a second experiment the thigh of a dog was amputated with the exception of the trunks of the crural vein and artery, the thigh was then pierced with a pointed piece of wood dipped in the upas. In both cases the poison was carried from the isolated parts into the general circulation by the vessels which remained, and the animals died of tetanus.

A ligature immediately placed on a limb, over a wound made with the upas, prevents the effect of the poison from shewing itself, whilst it remains on ; but it appears as soon as the ligature is taken off.

A general numbness produced by opium, or evacuations by means of salts, have no effect in resisting the action of the upas. Injecting air into the lungs by any convenient mode to cause an artificial respiration on the appearance of asphyxia succeeding tetanus, will prolong the life of a dog and sometimes save it, if the dose of upas introduced into a wound or the organs of digestion has not been too considerable. Even when the dose has been excessive, the animal may live an hour or more, if an artificial respiration be excited.

The nux vomica and St. Ignace's bean, are seeds of two trees of the same genus or order as upas tieuté, and produce the same effects.

In a great number of experiments, the phenomena observed in varying the application of extracts of the nux vomica and St. Ignace's bean, were invariably the same as those produced by the different applications of the upas.

The nux vomica and St. Ignace's bean, like the upas, act as powerful stimulants on the spinal marrow. The extracts of both, particularly if made with alcohol, are extremely active and bitter like those of the upas. There are however in the genus, strychnos, certain species, such as the strychnos potatorum and the vontac apple that are not bitter, and have no dangerous effects on the animal economy.

The extracts of the bitter species of the strychnos, such as the nux vomica, St. Ignace's bean, and the upas, in the organs of digestion, have a limited effect. It is known that the nux vomica, and St. Ignace's bean, have been often employed as medicaments in moderate doses. Little advantage, however, has been derived from them, because their effects have not been sufficiently known, and because they have been prescribed in maladies which they could not affect.

The bitter species of the strychnos, act particularly on the spinal marrow; and M. Delile concludes that in those which depend on the atony of this organ, they might be prescribed with good effect.

(Signed)

Paris, Oct. 31, 1809.

DELILE, D. M^s

V.

Account of the SPOTTED FEVER, which lately prevailed in ORANGE County, (N. Y.) read at the last Anniversary Meeting of the Medical Society of said County. By DR. D. R. ARNELL, and communicated to DR. HOSACK, M. D.

THE appearance and prevalence of the spotted fever or typhus petechialis in this district of country has been so considerable, and its progress, in many instances, so fatal, that it has arrested the attention of the most of our society, and induced me to write on that disease. Perhaps I shall not be able to throw any new light upon the subject after so much has been written by the eastern physicians, who have been more acquainted with its progress, duration, extent, and termination. From what I have read of their writing they have uniformly considered it a new disease ; for my own part, I think it only a species of the typhus petechialis of Cullen, and in reading the Medicus Novissimus which was published one hundred years ago, I find a fever there described as prevailing about London at that time, partaking of all its most prominent symptoms. A short extract from that work, page 272, may be of service in establishing the analogy of the disease there described as the prevailing malignant fever with the one which we are now considering.

“ It is attended with very severe symptoms, as violent pains of the head and stomach, frequent shivering, and a sudden but very great weakness, without manifest cause,

anxiety and pains in the back and loins, the breath smells strong ; there is great thirst, continual waking, spots sometimes appear on the body, the pulse is unequal and very low ; urine not so high coloured as in simple fevers. There are sometimes convulsions, deliriums, &c. &c. It may be caused by an infectious air ; by eating corrupt food, or drinking unwholesome liquors, as stinking water and the like. This is a very dangerous disease and oftens kills in a very little time. An unequal, quick, and weak pulse is a bad sign. If the hands tremble much when the pulse is felt, the disease doth most commonly end in death, especially if there be a foul tongue, a ghastly countenance, and the eyes sunk in the head. The cure must be undertaken as soon as possible, for this disease admits of no delay." The medicines recommended for the cure consist of spirituous and heating remedies and alexipharmics, and when the spots appear on the surface of the body they are to be promoted by sweating medicines ; blistering plasters are to be applied to the legs and thighs, especially if the cuticular eruptions advance but slowly or seem to retract before the state of the disease.

I have omitted Dr. Woodman's theory of the coagulation and dissolution of the blood, as the proximate cause of this disease, and only taken the leading symptoms to shew that the spotted fever is one hundred years old. Nay, I believe the fever described by the celebrated Dr. Sydenham under the title of "the new fever," and which prevailed in several parts of England, and began in February 1684, to be the very same disease,* and I am inclined to believe that it has been frequently and perhaps at

* See Dr. Pechey's translation of Sydenham, page 410.

regular periods a visitant among the nations of the earth in some and perhaps distant parts of the world. No regular history of fevers since the time of Sydenham has been handed down to us until the yellow fever made its appearance, since which time, until lately, the spotted or petechial fever has never made its appearance. The first cases of it which occurred were in Winchester, Litchfield county, Connecticut, about the 10th April, 1807. It has since prevailed in many places in that state, Massachusetts, and in Vermont, as well as in this part of the state of New-York.

I shall now proceed to describe the symptoms of the disease as it appeared here. The patient is generally seized with a pain in some particular part, most frequently in one of the limbs, the hip or the shoulder, shifting from place to place and often to the head or stomach, with great anxiety and restlessness. These symptoms are accompanied with cold shiverings and other marks of fever, which are soon succeeded by sickness at the stomach, indescribable distress about the precordia, numbness of the extremities, a remarkable and general prostration of strength, and a depraved action of the sensitive organs. In some violent cases the sight is much impaired, and even totally, though temporarily, lost. The pupil of the eyes is for the most part contracted in the beginning of the disease, though after its continuance for some time, it becomes considerably dilated or enlarged. The tongue has been invariably covered with a whitish coat and moist. The pulse is generally low, a little increased in frequency, remarkably intermittent, and unequal both in strength and weakness; but in some few mild cases it is very little altered. Respiration is in all cases much disordered. Pe-

techiæ or livid blotches, or a red, fiery eruption in most cases, appear on some part of the body and sometimes they are general ; though they are not always a constant attendant. There is in most cases a delirium attending from the attack through the whole course of the disease, though this was not universally the case. The duration of the disease has generally been from twenty-four to forty-eight hours, when the patient has either died or the disorder run into the form of a mild typhus of uncertain duration.

The indications of cure are as various and deceptive as the symptoms which accompany the disease. There is, however, one object to be kept constantly in view, and that is to restore the vital powers by bringing about a re-action of the system, or in other words, to reverse or overcome the prevailing morbid actions, and to force a new train of actions upon the system.

I have generally pursued the following method of cure with those whom I have attended. To an adult, I have immediately given about twelve grains of calomel and if the vomiting was considerable, a solution of volatile alkaline salts until the vomiting had in some measure abated ; then another dose of calomel according to the age and strength of the patient : this has been followed with an injection. I have next given the compound powder of ipecacuanha which if it did not soon produce a pretty general and copious perspiration, I have made use of blocks boiled in water and applied hot in the bed to the sides and extremities, together with a drink of tea made of the Rad. Serp. Virg. to which if the pulse was low and sunk, I added spirits, diluted alcohol

or brandy. The blocks I have generally used were of hemlock, though I did not believe them better than any others, yet I generally found that my patients had more confidence in them than others, which confidence I was willing to increase by every means in my power, and I have frequently found it to act like a cordial in very low and debilitated cases.

The stimulants which I have used were mostly of the diffusible kind such as brandy, laudanum, ether, and whiskey, and always proportioned to the violence of the disease. In some cases I have given a quart of brandy in six or eight hours with the happiest effect; though I have not generally used stimulants to so great an extent. But frequently in the latter stages of the disease it has been found necessary to add wine, bark, and other durable stimuli more effectually to invigorate and strengthen the system. Wherever I have found a considerable affection of the brain (which was the case in several instances) I have omitted the stimulants altogether and depended entirely upon calomel together with the employment of the several means which tended most powerfully to the surface of the body. The sweating should always be continued until the disorder gives way, which will frequently take one, two, and sometimes three days. In the hazardous stages of this disease, when an evacuation from the bowels is necessary, it is better promoted by injections than cathartics as the former do not debilitate so much as the latter.

This is the treatment which I have generally pursued and I am happy to add, that in about forty cases which I have attended, only two have proved fatal. I consider its mortality to be ascribed to the general law of epi-

mics, that those most susceptible of disease are liable not only to receive it the soonest but with the most severity, and that on its first appearance it is most mortal, when, after a certain period it becomes as much under the controul of medicine and as manageable, as ordinary diseases.

As I know we have generally little time to spare on our anniversary meetings, I have endeavoured to make the history and treatment as concise as possible. I do not believe that this disease is contagious, for I cannot discover a single instance where it appears to have been communicated from one to another; neither have I ever known a single person who has had the cow-pock to have the spotted fever. As preventives, will not emetics be useful? And what will be the effect of mineral acid fumigations, made of oxygenated muriatic gas?

VI.

FACTS and ARGUMENTS *in favour of the FOREIGN origin and CONTAGIOUS nature of the PESTILENTIAL or MALIGNANT YELLOW FEVER, which has prevailed in different commercial cities and seaport towns of the United States, more particularly since the summer of 1793.* Communicated in a Letter from Dr. WILLIAM CURRIE, Member of the College of Physicians, Philadelphia, Fellow of the American Philosophical Society, &c. to DAVID HOSACK, M. D. Member of the College of Physicians, of Philadelphia, &c.

Philadelphia, September 8th, 1810.

If it can be made to appear that the pestilential fever, usually called the yellow fever, occurred with all its complicated horrors in some of the commercial cities or sea-

port towns of this country at an early period after their first settlement, when none, or but few of the causes existed to which the origin of the disease has been imputed by the advocates of its domestic origin; and, if it can also be shewn that this pestilential disease did not make its appearance for many years previously to the year 1793, in any of those commercial cities or seaport towns, though the enumerated causes existed in much greater abundance during that period than they did at an earlier period, or than they have existed since the year 1793; we are most egregiously deceived if it may not be fairly and satisfactorily concluded, that it does not originate from those sources.

In tracing the malignant yellow fever to its earliest occurrence in this country, we find from the Journal of Thomas Story, Esq. Recorder of the city of Philadelphia, vol. 1st, that a very mortal fever prevailed in Philadelphia, in the autumnal months of 1699, which carried off six or eight persons daily, and some days ten or twelve. Mr. John Gough in his account of this fever, in his History of the Friends, vol. 3d, p. 516, says, that the fever which occurred in Philadelphia in the year 1699, was the same as that which has since been called the yellow fever, and had been prevalent for some time before in several of the West-India islands. This fact is also confirmed by a letter written by Isaac Norris, Esq. who resided in Philadelphia during its prevalence, who also relates that it was very mortal in Charleston at the same time. It also appears from an extract from Hewatt's History of South Carolina, communicated by Dr. Tucker Harris, that a great number of the inhabitants of Charleston were destroyed by it in 1699, that they suffered very much from

a hurricane the same year, and that the greatest part of the town was laid in ashes by fire.

There are no records of the occurrence of this disease in New-York, in the year 1699 ; but the late Dr. John Bard mentions in a letter, a copy of which was published in Carey's Museum for the year 1788, page 453, that he had heard from the ancient inhabitants of that city, that so long ago as the year 1702, a malignant fever little inferior to a plague was imported into it, which from its extreme mortality was distinguished by the name of the *great sickness*. This event is also recorded by Mr. Story in the 2d volume of his Journal. According to Mr. Hewatt's history, the yellow fever made its second appearance in Charleston in the year 1703, at which time the inhabitants were apprehensive of an invasion from the French and Spaniards. It appears from Hutchinson's history of New-England, that a similar fever was imported into Boston in the year 1693, from Martinique, by the fleet of Sir Francis Wheeler : see Hutchinson's history, vol. 2, p. 72. At the time of its first appearance in Philadelphia and Charleston, it was, and had been for several years prevalent in several of the West-India islands, into which it had been imported in the year 1686, from Siam in the East-Indies, by a fleet crowded with passengers and disappointed adventurers from that kingdom, according to the testimony of Labat, a Catholic missionary, who was sent from France to Martinique in the year 1694, to take charge of the churches there, which was eight years after that distressing occurrence.

It is also stated by Dr. Pouppe Desportes, who practised physic in St. Domingo from 1732 to 1748, in his obser-

vations on the diseases of that island, that the yellow fever, which he calls the "putrid malignant fever," was for a long time unknown in the islands, and that the first event which rendered it remarkable, was its appearance at Martinique soon after the arrival of a fleet from Siam. The regularity of its reproduction, however, at particular seasons of the year, he thinks, seems to require that it should be classed among the indigenous diseases of tropical climates.

Sauvages takes notice of this disease, in the first volume of his Nosology, p. 557, and says it was imported into Martinique in the year 1686, from Siam, by a ship called the Oriflame. A similar belief is expressed by Dr. Chevalier, as quoted by Dr. Lind. M. de St. Mery, in his history of the French part of St. Domingo, delivers a similar opinion with respect to the origin of the yellow fever in the West-India islands, and relates some additional facts respecting its spreading to several of the other islands; for the particulars of which, the reader is referred to the history of the French part of St. Domingo (in French) p. 700. After the year 1703 there is no record or popular tradition that I can learn of the appearance of the yellow fever in any part of the continent of North America for twenty-five years, though it continued its ravages in the islands for many years after that period, as we learn from Mr. Hughes' Natural History of Barbadoes, and from Warren's and Hillary's publications, as well as from Moreau de St. Mery's History of St. Domingo.

Mr. Hewatt, in the history already quoted, relates that in the year 1728, after an uncommonly hot and dry summer, a dreadful hurricane occurred in the month of Au-

gust, and the same year an infectious and pestilential dis-temper, called "the yellow fever," swept off multitudes of the inhabitants, both white and black. Mr. Hewatt also mentions the occurrence of the same disease, in the years 1739 and 1740. Dr. Harris says there is no medical record of the existence of the yellow fever at Charleston previous to the account sent by Dr. John Lining of Charleston, to Dr. R. Whytt of Edinburgh, from which it appears that it was prevalent in that city in the years 1732, 1739, 1745, and 1748; and in the opinion of Dr. Lining, it was an imported disease and contagious. I understand that you have some additional facts on this subject, preserved in the Manuscript notes of Dr. Prioleau. Dr. Harris states that he knows of no documents of the existence of the yellow fever in Charleston from the year 1748, to the year 1792; I presume he means 1794; though he recollects that it made its appearance there in the year 1761, and proved fatal to some strangers, and to one person who, he had been told, had long resided there.

At the time the yellow fever prevailed in Philadelphia and Charleston in 1699, and for several years after that period, the population was very inconsiderable, the buildings scattered, and many of them unconnected; consequently, but little of the filth and putrefaction, common to populous cities, could have existed in them at that time. There were no common sewers or covered drains, and but very few docks or wharves. The privies were not numerous; the water of the pump wells certainly was as pure as at present, nor were the grave yards numerous or crowded with dead bodies. Consequently but few of the causes assigned by the supporters of the doctrine of the domestic

origin of the yellow fever had “a *local habitation or a name,*” at least to any considerable extent, and yet the disease did make its appearance and spread with resistless fury, not only in Charleston, but in Philadelphia and New-York. From the year 1703, there was an interval of twenty-five years before its next appearance at Charleston, and upwards of forty years between the first and second time of its appearance at Philadelphia or New-York. It afterwards occurred in Philadelphia in the years 1741, 1747, and 1762, and at New-York in 1748, after which it was no more heard of in this country till the year 1793, when it made its triumphal entry into Philadelphia, and marked its way with dreadful mortality. Charleston escaped its invasion till the year following; and New-York a year later, since which time the frequency of its occurrence and the deplorable mortality occasioned by it are too strongly impressed upon the memory of those who have survived, to need particularizing. Having now shewn, that the pestilential yellow fever made its appearance in this country at a period when there existed none, or but very few of the sources to which its origin is ascribed by those who believe it to be derived from domestic causes, let us in the next place take a view of subsequent periods, when filth and all the enumerated causes of its generation had greatly increased, and had become offensive to the senses; and we shall find that no such disease was the consequence.

In the years 1777, 1778, and 1779, the city of New-York, and the city of Philadelphia in the year 1778, were in possession of a large army of British and Hessian soldiers, and in the years 1780, 1, and 2, Charleston was also in possession of an army of nearly six thousand fo-

reigners. During those periods less than usual attention was paid to cleanliness, as the minds of the inhabitants were kept in a constant state of alarm and uncertainty : hence putrefying animal and vegetable substances were suffered to accumulate and contaminate the air with their noxious exhalations ; yet not a case of yellow fever occurred in either of those cities among the natives or foreigners. It is true, a great mortality occurred among the American prisoners that were confined on board the memorable Jersey prison ship, stationed in the harbour of New-York, during the hot season, with symptoms of great putridity, and the disease was contagious ; but not a case with the diagnostic symptoms of yellow fever made its appearance either among those confined on board, or among the inhabitants of that city. The American prisoners, many of them from the northern states, were conveyed from crowded prison ships to hospitals in the city of Charleston, yet not a single case of yellow fever occurred.

At that time there were numerous docks, sewers, gutters, privies, and a variety of other sources of putrefaction in each of the cities which have been mentioned as well as for several years after that period ; and cleanliness was much less attended to by the police from that time to the year 1793, than it has been since ; yet no yellow fever spread destruction and desolation through the streets of those cities, during that interval, as it has done since the period last mentioned.

We have now shewn, that the yellow fever made its appearance in the cities of Philadelphia and Charleston at an early period of their infancy, when but very few of the causes which are supposed by those who pretend that

it originates from the confined and impure air of populous towns existed. We have also shewn that for a long period after those cities had become populous, and the sources of putrefaction had multiplied, and particularly, that during those years that the British and Hessian forces had possession of those cities, at which time the enumerated domestic sources which have been so confidently pronounced to be the cause of its origin, existed with aggravated circumstances, no yellow fever made its appearance or was the consequence.

If to these facts we add the well-known circumstance of the escape in 1793 of every seaport and commercial town in the union, with the exception of Philadelphia, and recollect that it had made considerable progress, and had occasioned very extraordinary mortality in several of the West-India islands, and particularly in Grenada, St. Vincent, and Dominica, several months before it made its appearance in Philadelphia, and that when it did make its appearance, it was distinguished by an assemblage of symptoms which had never been observed in any disease that had occurred in Philadelphia since the year 1762, and in that year, according to the notes of the late Dr. Redman, late president of the College of Physicians of Philadelphia, it was imported from Havanna, and communicated by a seaman to the family with whom he lodged in Jackson's Court, near the New-Market; if we recollect that the disease was new to all the physicians that had commenced practice in Philadelphia since the year 1762, and that Drs. Ross and Stephens, who at that time resided in Philadelphia, (the former of whom had lived and practised medicine many years in the East Indies, and had suffered by a fever, attended with

very violent and dangerous symptoms at Bassorah, on the Euphrates, in the year 1781, and the latter had been in constant and extensive practice for many years in St. Croix in the West-Indies,) had never seen a fever with the particular and extraordinary symptoms by which that disease which prevailed in Philadelphia in the summer and autumnal months of the year 1793, was distinguished ; and if we bear in mind that this destructive malady prevailed in New-Haven in Connecticut, Baltimore in Maryland, and Charleston in South-Carolina, in the year 1794, while all the intermediate seaports escaped ; and that in 1798, Easton in Maryland, including Fell's Point, Baltimore, Charleston and Savannah, (places noted for the insalubrity of their atmosphere in the autumnal season) escaped ; while Boston, New-London, New-York, Philadelphia, and almost every other commercial town, and several of the villages on the navigable rivers in the eastern and middle states were sinking under its resistless fury ; it appears a matter of astonishment, that any person of sound understanding can hesitate in deciding, whether it is of foreign or domestic origin.

To extricate themselves from the dilemma to which they have been reduced by facts and arguments similar to the preceding, some of the leading and most influential of the advocates for the doctrine of domestic origin of yellow fever, have had recourse to the power of imagination, and rejecting contagion as a vulgar error, have revived and adopted the more vulgar and exploded doctrine of planetary, cometic, and volcanic influence upon the constitution of the atmosphere extended round the spacious globe ; and have dogmatically pronounced, without offer-

ing any but the most puerile and frivolous evidences in support of their opinion, that a noxious and impure change has taken place in the proportion of the constituent principles of the atmosphere ; a doctrine, which is so foreign from correct observation, and so destitute of proof, that its adoption could only be excusable in the dark age of Gothic barbarism, when the human mind, unenlightened by a liberal education, and paralized by the fears of superstition and the arts of impostaors, rose in intellect but a small degree above brutal instinct. In short, to ascribe the occurrence of the yellow fever in Philadelphia, after an exemption of thirty-one years, to a noxious and *invisible* change in the constitution of the atmosphere, without furnishing direct and unequivocal proof that such change has taken place, is one of the tricks of ingenuity to impose upon and mislead unreflecting credulity, and is no more worthy of credit or respect than the Arabian Nights Entertainments, than the conceits of the astrologers and conjurers in the ages previous to the revival of literature, when every disease as well as every natural phenomenon not obvious to the senses, was ascribed to the influence of the planets. In point of absurdity and folly it is a match for the story related by Monsieur Poqueville, of the ignorant and credulous Greeks of the present age, who, he says, believe that a decrepid spectre to which they have given the name Cacodæmon, always precedes the plague, dressed in a funeral shroud, and glides along the roofs of the houses, calling the names of those who are destined to be cut off from the number of the living, while dogs howl hideously responsive to solemn music and murmuring voices which they are supposed to hear in the air.

If this puerile and superstitious nothing of the modern Greeks is rejected with contempt by all men of cultivated understandings, because it does not correspond with the experience of observers qualified to discern realities from the delusions of the imagination ; the doctrine of a noxious or pestilential change having been produced in the constitution of the atmosphere, being the mere creature of the imagination, and unsupported by adequate and satisfactory evidence, ought to be rejected for the same reason.

If such a revolution had taken place in the constitution of the atmosphere as is pretended, it would be unreasonable to suppose it would have operated in such an irregular and capricious manner as has been the case, if the yellow fever was the consequence or production of such a change, because it is contrary to the common course of things.

If such an extraordinary and unsalutary change had taken place, its operation would have been regular and uniform, and its influence would have extended to every place upon the globe under similar circumstances, and its presence would have been manifest from the change it would necessarily have produced on every other species of disease that owes its origin to the particular condition or qualities of the atmosphere, as well as to fevers ; but no such change is observable in cases of the quinzy, pleurisy, small-pox or measles, that have occurred since that change in the atmosphere has been said to have taken place. If a pestilential constitution of the atmosphere existed, all our sea-ports would have suffered at the same time every year, and not one in the centre of the union this year, one in the northern extremity, and one or two in the southern

extremity the next, and one or two in a different direction the year after, as well as in other places in an irregular manner several times since, while adjacent and intermediate ones remained entirely exempt, as we know from our own observations, as well as from the information of others, has been the case. And as no change has taken place in other diseases, as is pretended to have occurred in the fevers which appear periodically in cities, though no such change is apparent in those in marshy situations in this country, or in any other form or variety of disease, as has been satisfactorily shewn by Dr. Stringham, of New-York, in a paper relative to this subject, published in the first volume of the Edinburgh Medical and Surgical Journal, and as I know from my own observations, it may be fairly concluded that no such change has taken place in the constitution of the atmosphere.

During the prevalence of the yellow fever in Philadelphia in the year 1793, more than two hundred persons were confined in the prison appropriated for criminals, exclusive of one hundred and six French soldiers confined there by order of the French consul, and a considerable number of debtors in an adjoining prison. The Pennsylvania hospital contained its usual number of patients at the same time. There were more than four hundred paupers in the alms-house, and more than two thousand emigrants, recently arrived from the island of St. Domingo, were at the same time dispersed over different parts of the city and suburbs. All the prisoners in the jail, the patients in the hospital, the paupers in the alms-house, and the emigrants from St. Domingo dispersed over different parts of the city, almost to a man, escaped the disease, though they were surrounded by the sick, the

dying and the dead for several weeks, and breathed the same air as the rest of the inhabitants, with the exception of that confined in the apartments of the sick.

Circumstances like these establish the fact more forcibly than a whole volume of arguments, that the disease was not an epidemic, or derived from any general cause existing in the atmosphere, or from any derangement or alteration in the quality or proportion of its constituent principles, but was propagated by contagion alone, otherwise the persons circumstanced as just mentioned could not possibly have escaped more than the rest of the inhabitants : but on the contrary, the emigrants from St. Domingo, not accustomed to this climate, would have been the first to experience its effects, and would have suffered much more severely from the impurity of the atmosphere, if that had been the cause of the disease, than the native inhabitants ; for it is a fact confirmed by long and extensive experience, and which admits of no exception, that strangers are the greatest and most certain sufferers from exposure to the causes of the indigenous diseases of the climate into which they migrate. But a contagious fever is communicated only from the sick, or articles contaminated by them. No sick persons were admitted into the prison, the Pennsylvania hospital, or the almshouse, during the prevalence of the yellow fever ; and the emigrants from St. Domingo, having arrived at Philadelphia just as the disease began to make its appearance, had formed little or no acquaintance with the inhabitants, and of course had no intercourse with the sick. This, and this alone is the true reason of their escape, and is a very strong and direct proof that the disease was not derived from the causes which have been

assigned by those who contend that it is of domestic origin and not contagious.

If the disease had arisen from the domestic sources already enumerated, or from the joint effect of these and a deranged state of the atmosphere, all that breathed the air of the city, at least, if not all round the world in the same latitude, would have suffered more or less by it, and nearly at the same time, and not in that gradual and successive manner as they have done every time the yellow fever has made its appearance in any of the seaport towns of this country, and as is observed always to be the case with all the diseases that are acknowledged to be contagious.

The symptoms, also, by which the yellow fever is distinguished from the most dangerous cases of the bilious fever that occur in any part of the world, not excepting the indigenous fevers of Batavia, Calcutta, Goree, or Surinam, which are universally acknowledged to originate from the exhalations of putrefying animal and vegetable substances, furnish additional evidence of their being different not only in degree, but in kind, and consequently that they are derived from different sources.

To infer that the yellow fever is only a variety or higher grade of the indigenous intermittent fever of this country, because it generally occurs, progresses, and terminates at the same time of year as the intermittent, is confounding or mistaking coincidents for causes. By this mode of reasoning the plague of the Levant, with all its complicated horrors, is nothing more than a common intermittent, rendered malignant, or increased in power

by the influence of a deranged state of the constitution of the atmosphere upon its cause, or upon the constitution of the patient ; for, when it has been imported into the temperate climate of Europe, from Egypt, Syria or Turkey, it has generally commenced, progressed, and terminated in the same seasons as the common intermittent. For proof of this, see Hodge's account of the plague in London, in 1665, and Martin's account of its rise and progress in Moscow, in 1771.

If coincidence of events always depended on identity of cause, the pleurisy and the measles would depend on the same cause, and though differing in degree, and in the character of their symptoms, they would be the same in kind, and agree in their nature, and would require a similar mode of treatment ; for, according to Sydenham's account, they both begin in the month of February in the climate of England, increase during the spring months, and terminate about the summer solstice.

The only circumstance in which the yellow fever and the intermittent or bilious fever do agree, is, in being both destroyed or disarmed of their noxious power by frost. This, however, only proves that the *contagious principle*, which is the cause of the yellow fever, requires the same portion of caloric to preserve its volatility, and keep it suspended in the atmosphere as the miasmata of marshes, or the exhalations from putrefying substances, and that it requires considerably less caloric to render the contagion of the typhus of temperate climates volatile, and to keep it suspended in the atmosphere. But the contagion of the yellow fever, like that of the typhus or jail fever, requires to be accumulated or concentrated in the atmosphere in confined and unventilated situations, in order to render it

capable of producing any disorder in those exposed to it; and as the poison of arsenic becomes harmless by copious dilution in water, that also becomes harmless by diffusion in the open air. This is the reason why the disease is so rarely communicated from one to another in country situations, where there is a constant circulation of fresh air. They, therefore, who deny the yellow fever to be contagious in any situation, because it is rarely so in the open and free air of the country, might with equal reason deny that the jail or hospital fever, the typhus gravior of systematic writers, to be contagious, because it only operates in confined and unventilated situations, where cleanliness is neglected, with sufficient power to produce any morbid effect; but like the noxious gases, or other volatile poisons, becomes impotent and inactive by diffusion, or by mixture with a certain portion of fresh and untainted air. Those, therefore, who seem to think it so very extraordinary that the yellow fever, if contagious, does not produce the same noxious effects in the country as in the confined and less pure air of a populous city, I refer for a satisfactory explanation to a collection of facts on this subject published in Dr. Barton's Medical and Physical Journal, vol. 2d, part 1st. I shall now conclude with observing, that if the circumstances stated and detailed in the preceding pages are authentic and correct, and I challenge any person to disprove them, every disinterested and unprejudiced enquirer that examines and compares them with the facts and arguments of the advocates of the domestic origin of the disease must be convinced, that the yellow fever has never originated from domestic causes in this climate, but is exclusively of foreign origin.

I remain your friend, &c.

WM. CURRIE:

DR. D. HOSACK.

VII.

Extract of a Letter from Dr. FELIX PASCALIS, of New-York, to Dr. ALIRE R. DELILE, on the subject of the Poisons of the UPAS TIEUTE of Java, and other Strychnos.

New-York, February 10, 1810.

DEAR SIR,

I lately received your inaugural dissertation on the poisonous effects of the *Upas Tieuté* of Java, and other *Strychnos*, which you have presented to, and defended before, the faculty of medicine in Paris. I hasten to tender you my thanks for your attention, and to bear evidence of the excellence of your memoir. The subject was entirely new, and you have connected it with as many interesting physiological questions as your experiments could embrace. The means by which that violent poison rapidly pervades the sources of life; those by which it may be expelled or rendered inert, and in fine, the progress of its influence, which is chiefly active on the spinal marrow; all these different points form a highly interesting inquiry. I see also, with infinite pleasure, that you illustrate the new doctrine lately introduced by the celebrated Gall and others, that the spinal marrow is a centre of action totally distinct from that of the brain.

While you prove that tetanus and asphyxia are the immediate effect of the upas, I am prompted to inquire whether this latter is the exclusive and necessary consequence of the former; that is, of the stiffness and immobility of the thorax, as you call it, without any other cause?

Whenever blood is not accumulated in the brain or in the heart, we find that the simple contact of the lungs with atmospheric air is sufficient, with very little motion, to sustain life a long time, as is evinced by numerous instances of catalepsy, during which, no current of air can be perceived through the mouth or nostrils. It might therefore not appear objectionable to you, if I state that as the nerves of the respiratory organs originate from the *par vagum*, and as this also arises from the lateral part of the medulla oblongata, the sudden invasion of the poison on the spinal marrow necessarily palsies all the bronchial, pulmonary, and diaphragmatic nerves, and thus puts an end to life. In many instances of tetanus, opisthotonus, &c. I have witnessed, and which proved fatal, the stiffness of the muscles of respiration lasted many days, before death was induced; all your cases, however, are but of a few minutes duration.

The other strichnos, is *la fièvre de St. Ignace*, or St. Ignatius' bean, which name the Jesuits gave it when they imported it from India, as a sovereign remedy for the fever and ague. This explains why Lewis thought it was a more powerful febrifuge than Peruvian bark, and Lind praised it so much in the quartan fever. I must be permitted to relate to you a family anecdote. My father had been presented with one of those beans by a missionary Jesuit, the efficacy of which he thought inexhaustible. He was directed to infuse that large, black, angular seed in a tumbler of cold water during night. This must be drank in the morning upon an empty stomach. The draught, which was detestably bitter, never failed to effect a cure, and the bean was again kept for a similar use, perhaps twenty years. This fact proves that a cold infusion of this strichnos, could not in the least develope its

deleterious qualities ; and had the pious men who distributed and recommended it, suspected that it was a kind of upas of Java, they would not surely have designated it by the name of the great apostle of Loyola and the patriarch of their order.

As for your subsequent experiments, performed conjointly with Dr. Magendie, to prove the effects of this poison by its contact with the blood only, and without the functions of the absorbent vessels, they are, I think, pursued with an uncommon degree of accuracy. It is surprising, notwithstanding, why the poisoned blood of an animal, transferred into the veins of another is not more deleterious. Blood, according to the celebrated John Hunter, is liquid flesh, and its vitality is the product of the whole of its elements and localities. As soon as it is transfused from one living body into another, it is no longer the same living fluid ; and cannot be considered but like a vehicle of that or of an other substance. Now, since you have proved that the poisons strychnos, applied in their natural liquid state are inactive ; (no doubt owing to want of concentration) we must conclude that blood from a poisoned animal, transfused into another is but a part of the whole that was necessary to kill the first.

Leaving this subject, it appears to me, that we have no need to suppose an apparatus of absorbent vessels, in the cavities of the veins to explain the immediate effect of the poison when introduced in them. It is sufficient to conclude that they contain numerous nervous filaments or papillæ, all naked and ready to be acted upon. This cannot be objected to ; for you may remember that until very lately, respectable physiologists roundly asserted that the heart itself was deprived of nerves, but

Scarpa has dispelled the mist of error, and proved that they are numerous and naked on all the points of surface of that muscle. But you may oppose your experiment of the upas proving inactive on the crural nerve of a dog. No, no sir, long before I had read your interesting dissertation, I firmly believed that the functions of the nerves, and especially their irritability were always in *an inverse ratio of the points of their origin, and of the united trunks of their innumerable ramifications.*

VIII.

*Account of an EPIDEMIC which prevailed in GEORGIA
in the year 1809. Communicated in a Letter from
JOHN LECONTE, Esq. to Dr. DAVID HOSACK.**

THE following account of a disease which appears to be entirely new, may have something in it worthy of attention. The facts communicated are altogether collected from the writer's own experience ; hence, although something may be omitted which might not have escaped a more accurate observer, what has been observed by him is scrupulously correct ; and as no one at the time of its occurrence thought proper to attempt a description of it,

* In recording this account of the epidemic of Georgia, we are reminded of the *malignant pleurisy* which prevailed on Long-Island some few years previous to the American revolution. A history of that disease was drawn up by the late Dr. John Bard, and has been perused by several of his medical friends, but never published. As the manuscript is probably in the possession of some gentleman, to whom it has been loaned, the Editors take this opportunity to request any person possessing it, to forward it to them for the purpose of publication.

EDITORS.

he offers this with a hope of its proving interesting to those whose professional duties make the study of diseases their particular care.

In the beginning of the year 1809, an epidemic of a peculiar character, and attended with a distressing mortality made its appearance in some of the southern counties of Georgia. The preceding summer had been remarkably dry, scarcely any rain having fallen for the space of nearly four months; the winter also set in rather early, and although it did not bring with it any very severe weather, the easterly winds that constantly prevailed, made what little cold we had more sensibly felt than it would otherwise have been. From such a state of the atmosphere it was natural to expect, that the inflammatory diseases so common at this season of the year would have been more so than usual. But in their stead appeared a disorder infinitely more to be dreaded both on account of its fatality and its rapid extension.

At its commencement, to a superficial observer, it had all the appearance of pneumonia; for when a patient was first attacked, he complained of an intolerable pain in the head and breast, and of a cough which at first was slight, afterwards became more violent, unaccompanied by any expectoration except in some few cases of florid blood. But in a few hours came on a fever which soon removed every such erroneous opinion; for the quick, low, and intermitting pulse, the great depression of spirits and little thirst, clearly marked it as belonging to the opposite dia-thesis. In some, who were but slightly affected, the disease proceeded no farther, but in others more formidable symptoms shortly made their appearance: the tongue

became covered with a thick brown crust, so hard and dry as often to impede its motion: this frequently occupied only the middle or edges, and was generally sprinkled with a few livid spots. In those that recovered, it would crack and peal off in resemblance of the thickest skin. The pains which before were felt only in the head and breast, would now attack every part of the body, and shift with remarkable celerity from one to the other. None of the viscera or limbs seemed exempt from them, and they were sometimes so violent as to destroy all power of motion. In a few days after this period a highly putrid and offensive effluvia was exhaled from the body nearly similar to that which is observed in the last stage of dysentery, entire loss of appetite and of the digestive powers of the stomach then succeeded; the strength which before had rapidly declined was completely lost; delirium and a colliquative diarrhoea closed the scene. There never was any nausea experienced, and when the contents of the stomach were ejected, there was nothing remarkable in them. If the virulence of the disorder were not so great as quickly to destroy the vital powers, a critical sweat broke out. On the tenth or fifteenth day, the fever vanished, the pains were diminished, expectoration became easy and copious, and the patients slowly recovered, but were a long time before their former strength and activity returned.

Many, for months after their recovery were afflicted with a dull and heavy pain in the head, and, upon any exertion, were liable to be seized with a sudden vertigo. To such, an exposure to the sun sometimes proved fatal. It is remarkable that in every stage of the disease there was an evident tendency to gangrene in any wound that had been received a short time before its appearance, or whilst

its influence lasted, and even ulcers that had been healed for a number of years, were apt to break out afresh, and to spread with astonishing malignity. This, under bad treatment, when nature had cured the primary disorder, not unfrequently occasioned death.

The persons most subject to attack were those above the age of twenty, the young and healthy as well as the old and feeble, and more men than women were its victims.

Such are the outlines of a disease which seemed to confound the art of our physicians; which left them at a loss how to act, and in which experiment was to teach them. With regard to the mode of treatment, those who considered mercury as a universal medicine, administered it with a liberal hand to all who fell under their care; and, as might have been expected, found that nearly one half died. Those who were equally fond of venesection experienced a like dreadful result from their practice. On the contrary, when nothing was given but gentle sudorifics of eupatorium perfoliatum and other plants of similar virtues, there were but few, who, if careful to prevent a relapse, did not soon recover from the more violent symptoms, and then a tonic and restorative diet easily restored them their former health.

IX.

Information concerning the CANADA THISTLE, a Plant which exceedingly annoys the Agriculture of the Northern and Western Counties of New-York. In a Communication from SAMUEL L. MITCHILL, Member of the Legislative Assembly of New-York, &c. to Dr. DAVID HOSACK, Professor of Botany, &c.—Dated July 20, 1810.

ON Monday, the 12th of February, the petition of the board of supervisors of the county of Jefferson was read in the assembly, praying that the legislature would adopt some mode of destroying a noxious weed, called the *Canadian Thistle*, which threatens to become a serious inconvenience to that part of the state. This was referred to a select committee, consisting of Messrs. Kent, Bronson, and Wheeler; and on the 2d of March, the Chairman reported their opinion that some legislative provision ought to be made to prevent the further spread of that plant, which is becoming very injurious to agriculture in those parts of the state where the petitioners reside. Leave was given to present a bill for that purpose; which was accordingly reported under the title of "an act to amend the act relative to the duties and privileges of towns." This bill enlarges the powers of the freeholders and inhabitants of towns, to make and enforce such regulations as they may think proper, for the extirpation and destruction of the Canada Thistle.

Some valuable facts concerning the introduction of this plant into New-York, and the progress made by it there,

are contained in the letter which Mr. Bulkley, member of the assembly from Madison County, received from Mr. Timothy Dewey, an actual and intelligent observer. That statement was made at my request, and very obligingly placed at my disposal. I now transmit it, together with another letter from the same gentleman to me, and a parcel of the plants themselves, for your consideration. I hope, with your aid, the botanical name and character of this vegetable intruder may be established. And I ask all the force you can bring into action, against a foe which threatens to dispossess man and beast from their respective occupancy of land.

SAMUEL L. MITCHILL.

No. I.

Letter from Mr. Dewey to Mr. Bulkley, dated
Albany, April 2, 1810.

SIR,

Agreeably to your request, I give you some of the leading traits in the character of the *Canada Thistle*.—It is found in the state of Vermont, on the east side of the Green Mountains, and in the middle and northern parts of the state of New-Hampshire. It grows most thriftily in loamy or sandy land; such as is covered with the sugar maple, basswood, elm, butternut, birch, beach and mountain ash. It is rarely found on a clay or marshy soil. It resembles in colour and its general features and properties, the large annual thistle, of this and the eastern states, except its not being an annual plant; the stalk being much smaller and growing much higher. It grows from three to six feet in height, and frequently so thick

that it is impossible for any animal to pass through the beds, or plats of it. It destroys all other vegetation, whenever the land is infested with it. I know of no vegetable that will thrive with it. It appears to be a certain poison to most plants. *Potatoes* may grow on land infested with it if hoed five or six times in the season; and I think it the only vegetable that can grow to any advantage on ground where it is; corn seldom thrives with it. *Flax* in a wet season will partially conquer it. Various methods have been tried to destroy it, but no one has yet succeeded except hoeing, which is practised two years in succession, and at least six times every summer; cutting it, pulling it up, and covering it with chips, straw, swingling-tow, have been practised to no purpose. It will migrate from field to field in the course of a few years, apparently exhausting in one place all the nourishment fitted for the support of its noxious qualities. It is propagated by transplanting it; and by the seed, which is blown to great distances by the winds, by means of a down attached to it. The frost kills the root annually as far into the earth as it is communicated to it. The roots descend to great depth if not stopped by *rocks*, *clay*, or *hardpan*. The roots are frequently found twenty feet below the surface. Its blossom is of a pale pink colour, and shaped like the saffron, and like it armed with innumerable prickles from an eighth to half an inch in length, as are also every leaf from bottom to top, I do not know that it has any medicinal qualities. It has a bitter and slightly astringent taste.—It exhales, particularly when in bloom, an unpleasant narcotic odour. Cattle feed sparingly on it at any time. Some horses will feed upon it if cut when young and dried like hay.—In fact, I know of no good that it

does on earth. I think it difficult to describe the appearance of it satisfactorily to you without a drawing of it, which I have not time to perform at present. If these observations should be of any service I shall be rewarded for penning them. If it should be your wish I can get a drawing of the plant, also a correct botanical description of it, from a friend of mine in the State of Vermont. I shall be happy in doing any thing to rid society of such a noxious plant or to alleviate, in any degree, the evils produced by it. I am with respect, &c.

TIMOTHY DEWEY.

No. II.

Letter from Mr. Dewey to Dr. Mitchell, dated
Albany, 14th July, 1810.

DEAR SIR,

I send you by the steam-boat, a specimen of the "Canada Thistle," which I think will enable you to form a more correct opinion of its qualities than you could gain from any description that could be given of it. I think the description which I sent Mr. Bulkley, last winter, from recollection was correct in all its material parts. The specimen which I send was taken from a small plot of it in the town of Coemans about ten miles from this city. I have not been able to get a botanical description of it, nor any thing new relative to the best method of destroying it. I am inclined to believe that hoeing two or three years in succession is the only way it can be conquered. I have seen a letter (which was published in the Albany Register,) from Mr. Saunders* of the Vermont university. He

* See No. 3, under this article.

seems to think it a "friend to agriculture," and one of the "greatest blessings" that the farmers of Vermont can enjoy. It is my misfortune not to agree with the learned gentlemen of the Vermont University.

I am happy to afford you an opportunity of giving a correct botanical description of the pernicious weed, as also a correct drawing of it. If the pains I have taken to procure the plant should afford you any, the least, satisfaction, I shall think myself amply rewarded. I wish to do every thing in my power for the prosperity of our country.

I am with much esteem, sir,

Your obedient servant,

TIMOTHY DEWEY.

No. III.

Letter from Daniel C. Sanders, Esq. of the University of Vermont, to a friend in Albany, on the excellence of the Canada-Thistle; dated Burlington, 28th June, 1810.

DEAR SIR,

Your favour, dated "Albany, N. Y. 6 mo. 8, 1810." has just come to hand by mail. You request what information I possess concerning the plant which is called the "*Canada Thistle*." I have no evidence that the name is significant of its origin. It is to be found in every part of Vermont, and took possession of the lands before the oldest of the present inhabitants. The plant is not yet in bloom and maturity. I had cut off a head of it, in order to give you a botanical description of it. But

its parts, necessary to a description on Linnæan principles, are not yet sufficiently ripened and expanded. Something further may be done, should you continue to desire it, whenever the sexual and seminal parts shall be *matured*.

In the mean time, let me allay the fears and mitigate the complaints of your New-York agriculturalists. I have myself observed the thistle for *eighteen* years ; and can speak certain things from knowledge, derived from my own experience. The plant is in itself unpleasant, armed at all points, and threatening hostility to every being who is bold enough to invade it. Its right to the soil is founded on possession immemorial. The Vermont farmer, however, possessing physical power, forgot its im-prescriptive rights. They united all forces to exterminate it, "*vi et armis.*" In a very early period of our existence as a state, the *legislature* of Vermont passed an act, not that it should *grow* any more, but that every landholder should cause the thistles to be *mown* before they were ripe and had any power to disperse the seeds to any greater extent. But amidst the "*veto*" of legislation and the "*caveat*" of spirited agriculturalists, *nature* said they should grow. As if they shared in the *obstinacy* of mankind, amidst resistance, they *increased* the more beneath the severest discipline of the hoe, plough, harrow legislation, and even the fire. The farmers absolutely *despaired* in the unequal contest. Since they have done nothing, the dreaded enemy has seemed to retire ; and the thistles in this part of the world, have evidently and greatly *diminished*.

We seldom know the extent of the blessings we enjoy. Some of our most experienced farmers, who laboured

with the greatest zeal to exterminate these thistles, now see in them, not enemies, but *friends*, in a rough dress indeed, but still salutary. Several advantages are obvious.

1. They *enrich* land, serving as a valuable manure. 2. They keep the soil *loose*. 3. They serve as *food* for cattle. The stocks of clover and other large grasses will be left often *uneaten* in a yard, but the thistle *never* escapes, being always the object of desire to *some* kind of cattle. 4. It is conceived to be *healthy*, a remedy or a preventive of the diseases common to the brute creation. One of the most experienced farmers in Vermont has lately expressed to me his wishes for the *increase* of this plant on his farm, where he once tried long and ardently to *destroy* it; but he now has fears that it will ere long totally *disappear* from this section of the country.

Mowing it down before its seeds are ripe will not prove a sure *prevention* of its growth. The cultivation of land by *hoeing* and *ploughing* serves to extend and facilitate its perfection. Sowing lands with the ranker *grasses* will soon choak and destroy it. But, here, *time* seems to threaten its everlasting banishment, very contrary to all former expectations.

Nature has, however, made large provision to ensure its permanency, two ways. 1. By propagation from its *root*. This runs into the ground to a great depth. Some say, it extends *twelve* feet beneath the surface. I have seen it grow well from the root left in cellars dug *six* feet deep from the top of the soil. Any *part* of a root will be enough to become the embryo of a *new* plant. 2. By its *seeds*. Nature ripens these about two feet above the ground, in a fine situation, elevated for easy dispersion. It is one of those composite flowers which

opens its pericarpium when the seeds are ripe. These numerous seeds are endowed with *wings*, downy appendages, finely globular, which enable it to float in the air, and very generously waft the prolific race to distant fields, which are not its own. It is the swelling of its downy pinions which overcomes the resistance of its coats, opening a door for the eager seed to escape from the prison, where its further confinement would prove useless to all the purposes of vegetable life.—After all nature's ardent care to give this plant "*a local habitation and a name,*" her success in Vermont does not seem to be adequate to her efforts; and threatens nothing inauspicious to the industrious cultivator of the varied field.

I am happy to see you, amidst your *literary* labours, so engaged to promote the *first* interest of our beloved country, *agriculture*. However hasty the present letter, you may make any use you please of my observations on this subject, as they may tend to diminish the fears and complaints respecting the Canada Thistle. D. C. S.

X.

Botanical description of the Canada Thistle or Cnicus Arvensis, with Observations on the Means of destroying it, or preventing its Increase. Communicated in a letter to the Hon. S. L. MITCHILL, M. D. &c. from DAVID HOSACK, M. D.

New-York, July 21st, 1810.

SIR,

I HAVE examined the plant which you sent me yesterday as the Canada thistle, and find that it is well known

in Europe, both to the farmer and botanist. In Great Britain it is vulgarly called the *cursed thistle*, which appellation the *Canada* thistle no less merits in this country. You will find it described by Linnæus as the *serratula arvensis*. Mr. Curtis, in his *Flora Londinensis*, where you will see an excellent coloured figure of it, describes it as a species of *carduus*. Professor Willdenow, with more correctness, places it in the genus *cnicus*, retaining the specific name *arvensis*.

Upon carefully examining the *pappus*, especially with a glass, you will find it to be manifestly *plumose*, which is the character by which he distinguishes the genus *cnicus* from the *carduus* and *serratula*. The following description of the plant by Mr. Curtis so perfectly corresponds with that with which our country is infested, that with the aid of the annexed drawing of the plant, made by my friend Mr. J. Inderwick, from the specimen you sent me, it will readily be recognised by the farmer into whose fields it may intrude itself, and thereby enable him to take those measures for its destruction which have been found by experience to be the most effectual.

"**Roo**t perennial, round, almost the thickness of the little finger, of a dirty white colour, penetrating deeply, and creeping far and wide. **STALK** three feet or more in height, upright, somewhat branched, at the base round and somewhat wooly, above angular and smooth. **LEAVES** sessile, alternate, lanceolate, cut in so as to be somewhat pinnatifid, the sides somewhat pressed together, sinuated, waved, and curled, spinous, above smooth, green, beneath paler, scarcely villous, the uppermost ones almost entire.

FLOWERS middle-sized, of a pale purple colour, very fragrant.

FLOWER-STALKS leafy, one or two flowered, above somewhat woolly.

CALYX common to all the florets, ovate, contracted at top, imbricated, the scales numerous, pressed, close, lanceolate, sharp at the back,



Inverack pine!

terminated by a pointed appendage, purplish, points turning a little back, and mild.

COROLLA compound, tubular, uniform, all the *florets* hermaphrodite, nearly equal, monopetalous, funnel-shaped, the *tube* very slender, the limb divided into four, linear, reflexed segments, one more deeply divided than the rest.

STAMINA: five capillary *filaments*, very short and white: *antheræ* united into a cylinder, shorter than the corolla, the mouth five-toothed, the teeth white at the tips.

PISTILLUM: German ovate, compressed; *style* filiform, longer than the stamina, of a whitish red colour: *stigma* obtuse, finally bifid.

SEEDS linear, slightly four cornered: *down*, feathered, sessile.

RECEPTACLE hairy, hairs glossy.”*

After this minute description of the plant, Mr. Curtis makes the following observations upon the means of destroying it.

“ We have bestowed on this plant the harsh name of *cursed*, with a view to awaken the attention of the agriculturalist to its nature and pernicious effects; repeated observation has convinced us that many husbandmen are ignorant of its economy, and while they remain so, they will not be likely to get rid of one of the greatest pests which can affect their corn-fields and pastures.

“ Of the thistle tribe the greatest part are annual or biennial, and hence easily destroyed; some few are not only perennial, but have powerfully creeping roots, and none so much as the present; in pulling this plant out of the ground, we draw up a long slender root which many are apt to consider as the whole of it, but if those employed in such business examine the roots so drawn up, they will find every one of them broke off at the end, for

* Curtis' Flora Londinensis, Fasc. 6, fig. 18.

the root passes perpendicularly to a great depth, and then branches out horizontally under ground.

" To give an idea of its astonishing increase, we shall subjoin from the memoirs of the Bath agricultural society an experiment made for the very purpose of ascertaining it.

' April 1st, 1778, I planted in a garden a piece of the root of this thistle, about the size of a goose-quill, and two inches long, with a small head of leaves, cut off from the main root just as it was springing out of the ground: by the 2d of the November following this small root had thrown out shoots, several of which had extended themselves to the distance of eight feet, some had even thrown up leaves five feet from the original root: most of the shoots which had thus far extended themselves were about six inches under ground, others had penetrated to the depth of two feet and a half; the whole together, when dug up and washed from the earth, weighed four pound. In the spring of 1779, contrary to my expectation, this thistle again made its appearance on and about the spot where the small piece was originally planted; there were between fifty and sixty young heads, which must have sprung from the roots which had eluded the gardener's search, though he was particularly careful in extracting them.'

" When this paper was delivered to the society from experiments then made, I was of opinion that repeated mowing or spudding would not destroy this thistle. I have since had cause from further observation and experiments to think differently; so deep, however, does it penetrate, that these operations are the only ones which can well be applied to its destruction, and if they do not effectually overcome, they will greatly enfeeble it.

" This species is seen every where by road-sides, too

frequently in corn-fields, and more rarely in pastures ; it flowers from June to August."

In the *Flora Rustica* of Doctor Martyn, Professor of Botany in the University of Cambridge, you will also see a figure and description of the same plant, under the Linnæan name of *serratula arvensis*. After describing the plant he observes :

" This thistle is known every where by road sides, too frequently in corn fields, and *more rarely* in pastures ; flowering from June to August.

" It has the habit of the thistles, and is universally called so in English, though Linnæus makes it *aserratula*. It is the worst pest of arable lands, having strong creeping roots, striking down to a great depth, and then branching out horizontally, so that it is very difficult to root it out where it has once got possession. *Frequent and deep ploughing in dry weather* will destroy it in arable land. In pastures it should be pulled or forked out when the ground is well soaked with wet. Mr. Curtis affirms that repeated mowing or spudding, if they do not effectually overcome, will greatly enfeeble it.

" To us mowing has always appeared to make it run more at the root.

" The goat and ass will eat it ; horses will sometimes crop the head when young and tender, but no other cattle seem to touch it. It is said to yield a very pure vegetable alkali when burnt."*

* Martyn's *Flora Rustica*, vol. 4, fig. 132.

Such is the information to which I have been led by the examination of the Canada thistle. In addition to the practice of frequent mowing and spudding, as the best means of destroying this weed, I would suggest the following system of culture :

1st. After deep and frequent ploughing, to occupy the ground with corn, potatoes, or some other crop which will require frequent hoeing and clearing.

2d. In the autumn, after taking off the crop, again to give the land another deep ploughing, leaving it in the rough state, so as to expose the roots of the thistle to the frost of the ensuing winter : this process will also better prepare the soil to be laid down in grass the following spring. In doing this I would also suggest the propriety of

3dly. Sowing a much greater quantity of grass seed to the acre than is usually done. By pursuing the practice recommended by Lord Kames, of sowing from twenty to twenty-four pounds of clover seed to the acre, I have remarked that the grounds at the Elgin Botanic Garden are much more free from weeds than those of my neighbours, at the same time that the grass is much more delicate for feeding, less apt to be thrown down by the storm, and makes a less succulent hay, both more easily cured and better preserved than where it is more thinly spread, but of stronger growth. How far these may prove additional means of counteracting the growth of the thistle in question, I submit to you and other practical farmers.

I am sir, yours, &c.

HON. S. L. MITCHILL. DAVID HOSACK.

R E V I E W.

ART. I. A Plain Elementary and Practical SYSTEM of NATURAL EXPERIMENTAL PHILOSOPHY; including Astronomy and Chronology. By the late JOHN EWING, D. D. Provost of the University of Pennsylvania. Being the course of lectures, delivered by him in that Seminary (enlarged and improved from time to time) for upwards of twenty years. Illustrated by copper-plate engravings. The whole carefully revised and prepared for the press, with sundry explanatory and supplementary Notes, by ROBERT PATTERSON, Professor of Mathematics in the said University: with a Biographical Sketch of the Author. Philadelphia, Hopkins and Earle, 8vo. pp. 563.

DR. JOHN EWING was born in East Nottingham, Maryland, on the 22d of June, 1732. He commenced his classical studies under the care of the late Francis Allison, D. D. with whom also, he afterwards made considerable progress in the science of mathematics. The ardent zeal he possessed for scientific pursuits overcame every difficulty, and from his books and the conversation of his affectionate preceptor, he acquired a habit of close thinking, for which he was ever after distinguished. In 1754 he removed to the College of Princeton where by his persevering industry he became a favourite pupil of President Burr. In 1765 he took the degree of A. B. and finding himself restricted in his pecuniary circumstances, he accepted the appointment

of tutor in the college. About this period he resolved to choose a profession, and theology being most congenial to his turn of mind, he entered upon that study under the direction of his former friend and preceptor, the Rev. Dr. Allison. At the age of twenty-six he was employed to instruct the philosophical classes in the college of Philadelphia, during the absence of the provost, the late Dr. W. Smith. In 1759 he accepted an unanimous call from the first presbyterian congregation in Philadelphia, of which he continued a minister until his death.

From the year 1759 to 1773, he discharged his duties with a diligence and zeal not often surpassed. During this period his studious researches enabled him to collect materials for the compilation of his Lectures on Natural Philosophy. In 1773, he was commissioned, in conjunction with Dr. Hugh Williamson, to solicit subscriptions in Great Britain, for the academy of Newark, in the state of Delaware. In all the several places he visited in England, Scotland, and Ireland, he met with a cordial reception from gentlemen of the most distinguished reputation. In the summer of 1775, at the commencement of the revolution, he returned to America, though he was earnestly solicited to remain in England, and liberal proffers made to him for that purpose. In 1779, he was elected provost of the university of Pennsylvania. On his appointment, he prepared the lectures which are now published, and which he delivered during a period of twenty years. He was one of the founders and a distinguished member of the American Philosophical Society, to which he contributed several valuable papers. To the astronomical articles of the Encyclopedia published by Dobson, he made many additions. In the year 1795 he undertook the com-

pilation of a course of lectures on natural history ; but owing to his imperfect health, was unable to complete his plan. He died in September 1802. Dr. Ewing was an eminent proficient in mathematics, astronomy, and every branch of natural philosophy. In the Latin, Greek, and Hebrew languages his knowledge was very considerable ; in logic, metaphysics, and moral philosophy, one of the most accurate and profound of scholars.

From the life of Dr. Ewing, which we have extracted, chiefly from the interesting memoir prefixed to the work, we enter upon an examination of the subject matter of the volume.

This system of philosophy is preceded by an introduction, in which are first briefly mentioned the difficulties which have obstructed the progress of natural science. These were caused principally by the desolations of war, the hypothetical methods of philosophising, and the superstition and selfish views of the priests. Our author next remarks on some of the more important events which have contributed to the present free and rational method of investigation, and to the consequent advancement of knowledge. The most important of these was the reformation in religion. About the year 1640, Descartes published his philosophy, in which he maintained, that nothing was to be received upon mere authority. "Although he carried the humour of doubting somewhat too far," says Dr. Ewing, "and admitted only of the self-evident proposition, *I think, therefore I am*, he has the honour of introducing a more safe and liberal method of philosophising and thereby of paving the way for all the discoveries that have since been made in physics." This encomium bestowed on Descartes, appears to us to belong with equal

propriety to Bacon. Indeed, Dr. Ewing does not seem to have duly appreciated the stupendous labours of that extraordinary man. While to Descartes is attributed the superlative honour of having drawn a distinct line between the material and the intellectual world, and of having destroyed the power of the Aristotelian sect, Bacon is acknowledged as the father of experimental philosophy. At the time too, when the several productions of Descartes were offered to his countryman, the works of Bacon were making their way throughout the learned world, and that lasting monument of his fame, the *Instauration of the Sciences*, had already begun to effect a revolution in the empire of science, and to lay the foundation of natural knowledge on the sure basis of fact and experiment.

Of the investigations of Galileo. Dr. Ewing speaks in terms of commendation, and of the discoveries of Sir Isaac Newton, in language bold and decided. The introduction closes with some appropriate reflections on this branch of human learning.

The lectures commence with a general definition of natural philosophy, which is followed by the Newtonian rules of philosophising. The common and universal properties of matter are next detailed, and the several kinds of attraction explained. Succeeding the remarks on capillary attraction are some observations which we shall take the liberty of transcribing, as we were somewhat surprised that Dr. Ewing should have found a ready solution to several phenomena which have hitherto remained inexplicable to other philosophers.

"Hence too," says Dr. E. "the more subtle parts of medicines, used for the cure of diseases, are incorporated with the juices of the body, being attracted and carried to the remotest members by the force of these capillary tubes. Thousands of these vessels terminating in the pores of the skin, conduct the juices to the surface of the body, where they must be expressed by the action of the solids, and appear on the skin in large drops of sweat, or being greatly rarified by the natural heat of the body, are attracted by the air, and carried off in an imperceptible vapour, called insensible perspiration."

"The motion of a drop of oil towards the angular point of two planes, or in a tapering tube towards the smaller end, shows the construction and operation of the inhaling vessels of the skin. The large orifices of these vessels terminating in the surface of the body, attract and inhale the humid particles that either float in the air, or otherwise come into contact with them, and convey them to the internal parts of the body. Hence we see the rationale of all external applications in the cure of diseases, and the way of receiving infectious disorders." p. 27, 28.

Under *evaporation* the following observation occurs.

"Although air attracts both water and oil separately, yet, because of the natural repulsion between these two fluids, it cannot attract and dissolve them both at the same time. Hence the suffocating nature of air impregnated with oily particles, in a chandler's shop, or from lamps and the wicks of extinguished candles; the air in this situation not being able to attract and carry off the moisture of the lungs. But when air is saturated with poisonous and pestilential particles collected from putrefying substances, hospitals, or gaols, it may in respiration exchange them for the moisture of the lungs, and thereby produce various diseases, by what is called by the chemists a single elective attraction; the lungs attracting these poisonous particles more forcibly than their own moisture, while the air attracts the moisture of the lungs with greater force than that by which it attracts these noxious particles." p. 39, 40.

The remarks on the attraction of magnetism are, upon the whole, satisfactory. The observations on electricity

are well calculated to inspire the student with a desire of becoming familiar with the nature of this wonderful agent. After a detail of the Franklinian theory, follows an explanation of several atmospherical appearances dependant thereon, and an account of some interesting experiments made upon the *Gymnotus electricus*.

"One of these eels," says Dr. E. "having been brought to this city by a poor man, and showed for money, I went to see it among others, and upon receiving the first shock, immediately proclaimed it to be the electrical shock, from the sameness of the sensation it excited in my arm. This led us to make experiments for the confirmation of the conjecture ; and the success answered my expectations. When a single person put his hand in the water and irritated the eel, he received the shock, which he felt as high up as the wrist or the guard of the arm, according to the violence of it. The same happened when he irritated the eel by a rod of metal of any kind. I then proposed to try whether the shock could be communicated through a number of persons connected together by joining their hands ; and, to our satisfaction, we found the whole circle shocked in the same manner as by the Leyden bottle. This was a convincing proof that the power which the eel possessed was the same with electricity. Little fishes being thrown into the water with the eel, it first shocked and then swallowed them ; those that were too large to be swallowed, it stunned and then neglected. We tried to render the spark visible in its passing between two wires set nearly together, and forming part of the communication ; but we could not succeed in this experiment, though all the persons whose hands were joined felt the shock. We made many other experiments, and often repeated those above mentioned ; and the result of all was a full confirmation of the truth of our hypothesis. The owner of the eel would not suffer us to take it out of the water, that we might ascertain the particular part of its body in which this unusual virtue resided, or whether it was diffused over the whole. This has been since done with respect to the *torpedo*, by Mr. Walsh, who went over to the coast of France to make similar experiments on that fish, as many of that species of fish are found there. He found that the shock received from it was the electrical shock ; and that the fish possessed the power of shocking only in two parts of its body, direct-

ly opposite to each other, and near to the head. A spot on the back and another on the belly opposite to the former being of a different colour, led him to make the experiment, and he found that the electrical virtue was confined to these, and that any other part of the fish might be handled, without receiving a shock, while it was out of the water. Either of these places separately might be handled, without the shock being received, until a communication between them was formed. This makes it appear probable that the same may also be the case with the Guiana eel. One of these spots must therefore be always in the positive, and the other in the negative state ; or possibly each of them may be alternately in the positive state, while the other is in the negative state ; or rather, they are both generally in the natural state, until by an effort of the fish's will they are suddenly put into different states ; as we frequently found that the hand might be in the water, which formed the communication, without receiving any shock : which cannot be the case with the Leyden bottle when charged, which suddenly discharges itself upon forming the communication.

"Whether there be any electric atmosphere round these spots in the torpedo, we cannot tell ; as we had no opportunity of examining this matter in the eel, nor have we heard whether Mr. Walsh made any experiments for ascertaining this matter." p. 69, 70, 71.

The article electricity concludes with a notice of Mr. Eel's hypothesis, which, notwithstanding the zeal of its inventor, and the partiality of his friends, has lost the popularity it once possessed. This section of the work, though not altogether equal to the expectations we had formed of our author, is by no means void of merit. Dr. Ewing might have dwelt with advantage on the important discoveries in this branch of science made by our illustrious countryman Franklin. Our author next treats of motion in general, of the laws of non-elastic and elastic bodies, of mechanics and of the mechanic powers, of compound machines, of friction, of equable motion, of

motion in *vacuo* and through a resisting medium, of motion on inclined planes, of pendulums, of projectiles, and of the motion of bodies round a center. These several subjects are explained in a concise and perspicuous manner. The doctrine of pendulums, of projectiles, and particularly that of central forces, is clearly and ably illustrated.

On hydrostatics, which may be considered as the second grand division of the present work, the author is brief, and at the same time sufficiently plain to be comprehended by the general reader. On the specific gravity of solids immersed in fluids he has enlarged with great propriety.

Having explained the nature and properties of incompressible and unelastic fluids, the consideration of those which are elastic and compressible engage the author's attention. The construction of barometers and thermometers, the methods for determining the altitude and density of the atmosphere, and the several rules for obtaining the heights of mountains, are very judicious and valuable. Under the head of hydraulics, the usual information is communicated : little, however, is said on pumps, and the steam engine is dismissed in less than a page. This division of the work concludes with an account of the production of tides, winds, and sound, communicated in a plain and popular manner.

As our remarks have already extended considerably beyond the limits originally designed, we are prevented from expressing in detail all we could wish on the execution of the succeeding subjects of the present volume,

optics and astronomy. The author has proved himself eminently qualified, in every respect, to illustrate those sublime studies. This portion of the work, will be perused by the student with a decided advantage over many of the systems of the present day, and may be reviewed with profit by those who are desirous of refreshing their memories with the object of their former study.

Before we conclude, we cannot but acknowledge, that the editor, in offering to the public the present work, has performed a service honourable to himself and useful to the cultivators of science. When we reflect, however, that these lectures were prepared not less than twenty years ago, we think the value of the work might have been much enhanced by the insertion of some of the late and more important improvements in the several branches of science on which it treats. On compound machines abundant room was left for the exercise of the talents of the editor. The article pneumatics ought to have been enriched with the recent discoveries in modern chemistry. The observations on pumps and the steam engine might have been enlarged with much practical advantage, and notice might have been taken of the present application of steam to the propelling of boats. What is said on the winds of the United States is mortifyingly defective. The article optics, though extremely rich, shows an evident want of recent information ; the explanation of the manner in which the eye adapts itself to different focal distances is no less old than incorrect ; some of the numerous experiments instituted to determine this long agitated question should have been detailed, and the present generally received theory given. The same remarks, with equal propriety, may be made on the section astronomy. On

this subject we expected much, considering the reputation of the author, nor are we disappointed ; though it would have still more effectually recommended itself to the attention of the student, had the editor judiciously availed himself of the late discoveries made in that science.

We are well aware of the impracticability of enlarging sufficiently in a single volume on the numerous subjects embraced in a course of natural philosophy, and that the imperfections which have been mentioned, as well as some others that might be pointed out, have been occasioned principally through a desire of confining, within a moderate compass, the present publication. For our own part, we should have preferred the work of Dr. Ewing, improved by the notice of the recent discoveries in philosophy : its claims to popularity would have been more powerful. As it is, it affords honourable evidence of the distinguished talents of its amiable author.

ART. II. MEDICAL PAPERS, *communicated to the Massachusetts Medical Society.* Vol. II. Part 2d. 8vo. pp. 178. Boston. T. B. Waite & Co.

THE Massachusetts Medical Society was established as early as in the year 1781. The first number of their papers was published in 1790 ; a second number did not appear until 1806 ; this was followed in 1808 by the publication of a third. In 1809 was offered the 4th number, being the first part of the second volume, and we are now again favoured from the same highly respectable body with the publication of the second part. To this number we shall at present confine our attention.

It is in general well known that the spotted or petechial fever, has prevailed with greater violence in several districts in the eastern states than in any other parts of our country. As the disease was, in an especial manner, calculated to enlist the attention of all who had an opportunity of witnessing its symptoms, the faculty at large became particularly solicitous to obtain what information they could relative to the peculiar character of the distemper. In the laudable exertions which have been made for this purpose, the members of the Massachusetts society have eminently distinguished themselves. In order more effectually to collect, from the most authentic sources, whatever was calculated to shed light on this extraordinary disease, a committee was appointed by the counsellors of the society, consisting of Drs. Walsh, Jackson, and J. C. Warren, whose object it was to frame a series of questions, embracing every thing relative to the causes, history, and several modes of treatment that had been pursued. A circular letter to this effect was published on the 30th of March 1810, and a copy sent to every person from whom information was to be expected, and also widely circulated through the medium of the public prints. From the several communications* which the committee received on the object of their enquiry, a report was drawn up affording an abstract of the information they possessed, with such remarks of their own, as

* It is but justice to observe that these communications were obtained from Doctors Payne, Fiske, Rabbit, Rice, Robert Cutler, Whitton, Flint, William Cutler, and Haskell, in the county of Worcester: and from Doctors Bartlett, Hurd, and Chaplin, in the county of Middlesex, all of whom are fellows of the society. From several gentlemen of respectability in the state of Connecticut, some particulars have been obtained.

the subject suggested. This report was read and accepted at a meeting of the counsellors, held on the 21st of June, and ordered to be printed. It occupies 120 pages of the present number.

From this luminous document, which greatly excels all that has been offered on the subject of the spotted fever, and from the perusal of which we have realized all we anticipated from our enterprising Massachusetts brethren, we take this early opportunity of laying before our readers some of the principal facts which it contains.

"The last summer and autumn, and the first part of the winter were remarkably healthy throughout the country. The disease under consideration appeared first in the town of Dana, about the beginning of the present year, but not in any considerable number of instances until during the cold weather, after the middle of January. From the accounts transmitted to the committee it appeared at Petersham in the latter part of February, and at Barre, Oakham, Rutland, Paxton, Hardwick, New Braintree, Brookfield, Spencer, Sturbridge, Winchendon, Athol, Gerry, Leicester and Worcester, in the course of the month of March, mostly about the third week in that month. The above mentioned towns are all in the county of Worcester. It appeared in that portion of Cambridge, called Cambridgeport, Middlesex county, on the 24th of March, and in April at Lancaster, county of Worcester. In the course of April and May a few cases have occurred at Boston, and perhaps an equal number in proportion in many towns in the counties of Worcester and Middlesex. During May it appeared in Springfield, county of Hampshire, and had not subsided in the second week of June.

"Most of the country, in which this disease has appeared, is inland and very elevated; it abounds with hills and vallies, has many ponds and many running streams and fresh-water rivers. In Cambridgeport, the first place near the sea-coast, at which it was observed, it was confined for the most part to the land which was recently salt meadow, and which is now intersected by many foul ditches. In

Boston this disease, as also typhus, has occurred most frequently in those parts of the town exposed to the flats and water." p. 120—1.

From the natural history of this disease, it appears to have been of various degrees of severity, and though in some cases it destroys life suddenly like the plague, yet in a large proportion of cases it is very mild. The committee are of opinion that the communications which have been made to them relate chiefly to the disease in its most malignant forms.

" The invasion of the disease is generally sudden and violent. In its course all the functions of the body are more or less interrupted, and often some of them are entirely suspended. The subject of it is seized in the midst of his usual labour or occupation, and oftentimes is struck down suddenly, almost as by a stroke of lightning. The first symptoms are various, such as local pain or paralysis, delirium or coma, and rarely spasms or convulsions.

" The disease often commences with shifting pains. The patients suddenly feel a pain in one joint or one limb, often in a finger or toe, in the side, stomach, back, neck, or head. Sometimes the sensation is like the stinging of a bee, frequently it is most excruciating pain, which at once arrests and commands the whole attention. This pain moves from place to place without losing its violence, generally approaching the head, and is often confined to one side of the body. It is said that the left side is more frequently affected than the right. The head is more frequently first affected with pain than any other part; and when not affected at the first moment, it almost invariably becomes so in a short time. The pain in the head is oftentimes intolerably severe, so that it is compared to the beating of hammers upon the part; and the patient says he shall become crazy, if it continues.

" Partial loss of sensibility and paralysis are, in other cases, the first symptoms, and often occur in the course of the disease, when they do not in the beginning. The powers of sight are affected in various degrees from a slight dimness to absolute blindness. In like manner the sensibility of the skin and parts subjacent is diminished, so that a

limb becomes numb or feels as if it had been asleep. The other organs of sense have not been noticed to undergo similar affections." p. 122—3.

" In whatever form the disease commences, there suddenly ensues great prostration of strength. In some instances the patient is described as almost immediately falling down under the weight of disease. This prostration is accompanied or followed by universal or partial chills ; the skin becomes dry and pale, or mottled like one who has been long in the cold, eyes glassy, nose contracted, the face sublivid, with paleness round the mouth, and the countenance expressive of the utmost anxiety and distress, or its features dissolved with a loss of all character and expression ; the whole body becomes cold, respiration very laborious, especially in children, pulses very small and feeble, slow at the commencement but shortly very frequent. If there be neither coma nor delirium, the spirits are very much dejected, the patient suffers extreme solicitude and anxiety, with apprehensions of death, frequent sighs, restlessness, and agitation. He complains of oppression and faintness, with undescribable distress about the praecordia, and a sensation of fullness at the stomach. Frequently eructation, nausea and vomiting ensue, and also fainting in the early stages of the disease ; and the vomiting occasionally becomes incessant, embarrassing and defeating every effort to give relief by internal medicines, while it exhausts the patient." p. 123.

The different stages of this disease, as well as the duration of each, are not particularly distinguished. In the opinion of the committee this has happened on account of the diaphoresis which was generally established at an early period of the disease.

" Among the varieties of the disease, the following is given as a description of some cases which have occurred especially among females. ' Universal deadly coldness ; skin white as polished marble and smooth ; countenance perfectly placid ; not one distorted muscle ; pulse in the wrist imperceptible ; motion of the heart scarcely to be felt ; respiration visible only by gasping, and that not frequent ; and as it were only a step between this imperfect state of life and death.' Even from this state of deadly stillness patients have been restored to life and health.

"As has been already mentioned, some die in the early stages of this disease. A few are taken off suddenly in ten or twelve hours; others in twenty-four, thirty-six, or forty-eight hours from the first symptom of disorder. Death rarely occurs after the third day; indeed some of those practitioners who have been most conversant with the disease, consider their patients safe if they pass through the first twenty-four hours without any mortal symptoms." p. 126.

Having remarked that all the symptoms mentioned were not to be observed in every case, but that on the contrary, the spotted fever exhibited a great diversity of character both in the several affections and in the order in which they occurred, the committee have collected together in one view the most important symptoms. No apology, it is presumed, will be necessary for our inserting it entire.

"The face and eyelids are often swollen; and in some cases the face is swollen and black like that of a person strangulated. The eyes are mostly described as being deprived of their natural lustre, dull and glassy, or red and watery, with the pupil, sometimes contracted, more frequently dilated. Sometimes the pupils are seen to vibrate from one extreme to the other. The eyes are also described as appearing more brilliant than usual, with a wild penetrating stare; and it is said that this state of the eyes is sometimes noticed several hours before the patient is aware of any morbid affection.

"The sensations in the head are various, such as dizziness, vertigo, pain; throbbing, severe, excruciating pain; and stricture across the forehead and eyes. These sensations are often followed and sometimes accompanied by delirium. The delirium has all the varieties observed in other acute diseases, from that which is mild and light, and indeed little else than incoherence of ideas, to that which is low and muttering, or that which is violent with rage. Coma as well as delirium is of frequent occurrence, and is even more common in the late stages of severe cases. There are instances, especially in adult males, in which consciousness remains to the last unimpaired, although the issue be fatal.

" There are also other symptoms which appertain to the animal system ;* the following are particularly noticed. Numbness or total insensibility and paralysis in a larger or smaller portion of the body, which occur often in the first stage of the disease, and continue through its whole course, and even after other symptoms have subsided ; a sense of lassitude and weariness ; soreness of the flesh, especially in children ; and spasms which frequently occur, and shift suddenly in the same manner as the pain does from part to part ; sometimes resembling hysterical spasms, sometimes occasioning the head to be drawn back as in opisthotonus.

" The respiration is much and variously affected ; in general it is difficult. Cough rarely occurs, and the difficulty of respiration has not commonly appeared to rise from an inflammation of the lungs. In two cases, however, symptoms of pneumonia have arisen, and in one of them the existence of that affection was demonstrated after death.†

The actions of the heart are very feeble in this disease ; about its region there are often very distressing sensations, described as death-like feelings. These sensations are occasionally relieved by spontaneous vomiting, and possibly they may have some connection with the gastric region. In a few mild cases the pulses are little altered ; but commonly they are very feeble, and except at the commencement, frequent. It is said that they sometimes denote more strength in the system than it is found to possess. They are sometimes hard ; more often they are intermittent, and irregular both in force and frequency ; they are remarkably variable, so that in the course of an hour, and indeed in much less time, they change from quick to slow, from strong to feeble, and vice versa ; at the accession of delirium early in the disease, they have been observed to undergo a sudden

* This phrase is used in the sense given to it by Bichat—under this division he comprehends the brain and its dependant organs—viz. the nerves and voluntary muscles, so far as they are dependant on the brain.

† These cases are specially noticed, because we are told that this disease has prevailed on the borders of lake Champlain, in Vermont, and also in Montreal and its vicinity ; and that in those places it has been combined with pneumoniac inflammation.

acceleration from sixty or seventy to one hundred and twenty, and even to one hundred and fifty in a minute. The pulsation of the carotids is often very considerably greater than that of the radial artery.

" The phenomena of the skin have received considerable attention ; some of them have given to this disease its vulgar name. In the early stages the skin is perhaps invariably dry ; at a later period spontaneous sweats have broken out on the head, chest, and superior extremities. A doubt has been expressed whether universal sweating would not occur without the aid of art. In a few cases which have occurred in Boston and its vicinity there has been observed a great tendency to this evacuation, and it has very readily become profuse. Doubtless there have been cases in which it was very difficult to excite diaphoresis, but in many it has been sufficient to put the patient in bed, and give him a cup of any warm liquid. The sweats are said to have an offensive and peculiar odour ; it is fetid ; but this does not seem to describe it sufficiently. It has been compared to the smell which arises from a dead rat within the wainscot of a room. It has also been compared to the smell of a mercurial sore mouth.

" In many cases the skin is said to be remarkably smooth ; but this is not an universal appearance.

" The *spots* on the skin are of various descriptions. They occur in all stages of the disease ; less frequently however on the first than on the subsequent days. Frequently a rash or miliary eruption only appears, or a few blotches on the inside of the elbow, and other similar parts : and it has been suggested that these may be produced by the mode of treatment usually adopted. The blotches are florid, or red and fiery. An appearance like measles has also been noticed, and likewise vesicles and pustules, which have been compared to the vaccine and variolous eruptions. In some cases these spots and eruptions have appeared at successive periods two or three times in the course of the disease. The vesicles and pustules are very frequently torn by scratching ; after which, or without being torn, they are commonly followed by scabs of a brown colour ; but occasionally they are followed by ulcerations which do not heal until after recovery. These affections of the skin are often attended with itching ; and independent of them, itching very frequently occurs, especially on the third day, when the symptoms become more favourable at that time.

This itching is sometimes extremely violent, so that the patient will almost tear up his skin in endeavouring to alleviate it. All these affections are frequently noticed at the time when the more important symptoms abate, or subside.

" In a few instances, vesicles containing a bloody fluid occurred in the county of Worcester. These vesicles were compared to blood blisters, and were about the size of a large pea; they appeared in various parts of the body and limbs; in a few days they broke, discharged a bloody fluid, and scabbed over. In one case, in which the attack was very violent, blisters resembling those produced by cantharides appeared on the second and third day on the breast, and on one foot. They were about five inches in length, and nearly one in breadth. On the fourth day from the attack, some of those on the breast and that on the foot became black and dry, and the skin was sphacelated. The eschars with due treatment left clean ulcers, which healed without difficulty.

" The appearance of petechiae and vibices has been noticed. They occur in comparatively few cases of the disease. They are of worse portent in proportion as they are more dark coloured. They do not however always occur in fatal cases, nor are they confined to such cases.

" It is not easy to determine in how large a proportion of subjects the skin is affected with spots and eruptions. Under the observation of some gentlemen, they have been very rare. One remarks that in eighty cases, among which twenty were very severe, he had seen only four instances in which spots or eruptions of any kind had taken place; and he adds that these had not been the worst cases under his care. Another estimates the proportion of cases, in which there had been discovered some of the affections which we have described, to be two thirds of the whole. He includes, however, very slight affections, which have often disappeared in a few hours.

" Desquamations of the cuticle, and more rarely œdematosous swellings of the extremities, have occurred at the termination of the disease.

" The tongue is usually moist and white through the whole disease, when it terminates within three or five days. When it continues

longer, the tongue becomes darker coloured, yellow or brown. It is sometimes very clean and red.

" There is seldom any remarkable thirst; in a few cases it has not been at all greater than natural. Some patients have a desire for cold water, but not for any other liquid. The appetite is diminished, but it is not always so entirely destroyed as in most other acute diseases. Children particularly sometimes express a strong desire for food. Nor are the powers of digestion always suspended so entirely as in most other febrile diseases. Vomiting very frequently occurs, but in the first few weeks in which the disease prevailed bile was very rarely thrown up. The matters ejected from the stomach were commonly the articles recently swallowed and a ropy mucus. Yet at all times there has been discharged by some persons a dark green liquid; and in some instances a liquid of a blueish colour.

" The bowels are commonly very quiet, and are not readily excited to action, especially on the first day of the disease. When discharges are made from the bowels on those days, they are commonly of a dark, green colour, and to cursory observation, resemble tar. It is said by one gentleman that the discharges from the stomach and bowels are rarely coloured by natural, healthy bile, until the third day. In two cases we are told that dysentery supervened in an advanced stage of the disease; but it was of short duration. Patients sometimes complain of soreness of the throat; and on inspection, the fauces are found very red, but not swollen in any part. The sensation of soreness is often just below the fauces where the parts cannot be seen. Aphthæ have been occasionally observed.

" In most cases the urine has not been very different in its appearance from that in health, but the quantity has been less. Strangury has been ranked among the occasional symptoms; but a question may be permitted whether this has not been produced by the remedies employed.

" There is an irregularity in the course of the symptoms in this disease, and so also in their duration. Blindness continues from half an hour to twenty hours; severe pain in the head, and delirium from four to twenty hours; deep coma from six to twelve hours, and even from the beginning to the end of the disease, especially in children..

" In a few instances slight affections of the parotid glands have been observed, but in general, glandular swellings have not been noticed by our correspondents. In some cases swellings have occurred on the joints and limbs. These have been very sore to the touch, and their appearance has been compared to that of the gout. The parts so affected feel as if they had been bruised. These swellings arise on the smaller as well as on the larger joints, and are often of a purple colour. Those on the small joints especially sometimes disappear as the disease approaches its crisis. It is not stated that the disease of the whole system ever subsides when these local affections take place. By some practitioners the inflammation in these cases is called erysipelatous, and probably with justice.

" In a few instances purulent discharges from the ears have been noticed. They have not been accompanied by any remarkable change in the course of the disease. In a small number of cases the disease has been followed by deafness, from which the patients have not speedily recovered. Two persons were affected in this way in the year 1808 at Amherst, and their hearing has not yet been restored.

" By some of our correspondents it is said that recovery from this disease has been rapid, and the subsequent state of health as good as usual. But the exceptions to these remarks are certainly numerous.

" The attack of this disease has been described as sudden and violent; but there are cases in which the ordinary symptoms occur in a slight degree, and increase gradually for hours and even for two or three days before the disease becomes very serious. We may also add in this place that in some parts of the country there were many persons who exhibited some of the symptoms of the disease such as local pain, and numbness, but who were not so much affected as to be confined.

" In general our correspondents do not recognise this disease as having before occurred under their notice. Two gentlemen believe that they have in the course of many years seen a few cases of the same character. Six or eight cases occurred in Amherst in 1808.

"The replies to our questions respecting the diagnosis are not very full. It seems to be generally believed that the disease is to be distinguished only by attending to the combination and course of the symptoms. One gentleman states that the most general characteristics are 'universal prostration of strength, and a depraved action of the sensitive organs.'

"It is very generally agreed that this disease is not contagious.

"Neither very young infants nor aged persons have been so subject to this fever as persons in middle life. In one town nearly all those affected were between eighteen and thirty years of age; but the same remark was not made elsewhere. By some gentlemen it is remarked that females are more subject to the disease than males; and this was true in Worcester, the only town from which we have received a list of the sick. Yet one gentleman states that it attacks more especially the most healthy and robust, male and female. Women in different stages of pregnancy have had severe attacks and have done well; but they have not all been so fortunate. Blacks are not exempted from the disease.

"To this part of our Report, which with a few alterations is the same as it was when read to the counsellors at their meeting on the second of May, we have now to add, that in cases of this disease which have occurred since the middle of April, as observed in Boston and Lancaster more particularly, some change has been noticed in the symptoms. Discharges of bile from the stomach, and foulness of the stomach and bowels, have become more common; and so also have hardness of the pulse and heat on the surface of the body. In many of these cases the bile has appeared in undue quantity and much altered in its character; its consistence very thick and tenacious, and its colour dark. In several fatal cases at Lancaster, and in two not fatal, a dark matter was thrown up, which was called 'black vomit.' Whether this matter was the same called by that name in the autumnal fevers of warmer climates, the committee are not assured.

"It appears also that in various parts of the commonwealth the common typhus is much more frequent than usual at this season of the year; appearing in many instances with its ordinary symptoms; but in others with a character more or less resembling the disease which we have described." p. 128, 9, 130, 1, 2, 3, 4, 5, 6, 7.

As to the number of deaths by this disease, though the committee were unable to give an accurate statement, it does not seem to have been by any means as fatal as was formerly represented. Under the inspection of one physician in the county of Worcester, there occurred but two deaths in one hundred and thirty patients, under that of another, one death in upwards of fifty patients, and under another, one death in nearly one hundred patients. What a complete refutation of the accounts given in many of the public prints do these facts afford !

A general statement of the most common morbid appearances which appeared on dissection is next given. For want of room, we can only insert some few particulars. Soon after the patient expires, the skin assumes a formidable livid colour. This appearance is either generally diffused over the skin, or else it exists in spots commonly of an irregular form, but occasionally rounded. Wherever the cuticle has been removed by vesication, the skin is almost black and often covered by fluid blood. *Head.* When the cranium is separated from the dura mater the membrane usually discharges a considerable quantity of blood. The whole surface between the dura mater and tunica arachnoides is found to be quite moist with fluid, oftentimes transparent like water, sometimes quite red coloured. The longitudinal sinus is filled with blood, and great fullness of the veins on the surface of the brain exists. In some cases the two hemispheres of the brain adhered to the dura mater, near the longitudinal sinus, and to each other with so much strength, as often to require a laceration or incision through the substance of the brain, in order to arrive at the corpus callosum. The medullary substance exhibited a great

number of bloody points at the sections of the vessels, while the cortical part seemed paler than usual. The lateral ventricles always contained a notable quantity of water. The membranes at the basis of the brain presented the same appearances as at the vertex. *Thorax.* The heart generally exhibited some appearance of disease. In every instance the small vessels on the surface of the organ are beautifully injected. The right and left cavities usually contained a small quantity of black blood, and even the aorta has been seen gorged with the same dark coloured fluid. The lungs were not usually deranged. Their substance contained a very variable portion of blood. Their colour externally was an ill-looking purple, and the pleura over them seemed to be shrivelled and adhered to the dia-phragm. *Abdomen.* The contents of this cavity have scarcely shown any marks of disease. The coats of the stomach were generally free from the slightest morbid appearance ; its contents had sometimes a resemblance to coffee grounds, or more nearly to brown soup, while in other cases they consisted of greenish mucus : each without any offensive odour. The whole tract of the intestinal canal was in a healthy state. The liver and spleen were distended in various degrees, and quite free from any morbid change, except an extreme lividness. The gall bladder was generally full of bile, which was sometimes of a dark colour and ropy consistence. The pancreas and kidneys presented nothing extraordinary. The bladder was commonly full of urine. The muscular substance, as well as all other parts which were filled and exhibited the colour of blood, were of a livid appearance, such as is not witnessed in other diseases.

From the several modes of treatment which have been

adopted, it does not appear that blood-letting and other evacuations usually made in the commencement of acute diseases were so generally practised. The lancet, however, has been employed, and the committee have cited particular cases, in their judicious remarks on venesection, in which it has been used with benefit. *Cathartics* were thought injurious, until the third day of the disease ; enemata were sometimes administered. " In general, emetics have also been thought injurious on the first and second days ; but in this respect the caution had not been so universally regarded." The most effectual manner, however, of treating the spotted fever, that which has been most generally pursued, is the *sudorific* method. We most cordially unite with the committee in their opinion on this subject. Many of the accounts published of the salutary effects of stimulants in this disease appeared to us no less incredible than the reports of its mortality. But we are fully apprised that many eminent practitioners have employed in some instances, the cordial, stimulating method with advantage. The experience of each day, however, throws additional light on the character of the disease, and we confidently believe that as its nature becomes better understood, the sudorific method will be more and more generally adopted. We cannot resist inserting the observations of the committee on this point.

" The practice which has been by far the most generally pursued, and considered of primary importance, is to produce early and long continued sweating. In many cases, especially mild ones, this has been very easily effected ; in some severe cases it has been very difficult. The means which have been adopted for this purpose are very minutely detailed. The remedies are internal and external. The internal remedies employed have not gene-

rally been those now most commonly directed to produce diaphoresis in fevers, such as antimonials; and which appear to excite the capillary vessels without increasing the actions of the heart or large vessels either in force or frequency. Preparations of antimony particularly seem not to have been at all tried; but ipecacuanha, which resembles in its operation the preparations of that mineral, has been employed very successfully by some in combination with opium.

" In general the internal remedies administered in this disease with a view to produce sweating have been those called cordials. The external remedies have been warmth and moisture, and such articles of cloathing as would more effectually confine both. The following is a summary of the directions commonly given on this subject.

" The patient is first put into a warm bath, or his feet are bathed in warm water; then, being well rubbed, he is to be laid in bed between blankets, and bed cloaths added in proportion to his sensations, or to his actual temperature when his sensibility is very much diminished. Around him are to be placed bottles of hot water, or billets of wood heated in boiling water and wrapped in flannel; or he is to be wrapped in flannel wrung out of boiling water; sinapisms are applied to the feet; and he is to swallow frequently some warm liquid of the description given above, preferring to use the weakest which appears adequate to the particular circumstances of the case. The articles most commonly employed for this purpose are hot infusions of the leaves of mint, penny-royal, and other similar plants, wine-whey, wine and water, wine, brandy and other ardent spirits more or less diluted, camphor, sulphuric ether and opium. It is not generally, thought useful to excite profuse sweating. To this there appears to be a very considerable tendency, when moisture is once produced on the skin; and some very judicious practitioners have thought it necessary to check this great evacuation by wiping and rubbing the skin with warm dry cloths. But it has been thought very important to maintain the perspiration in a moderate degree for a length of time proportioned to the severity of the case; that is from twenty to forty hours, and even longer in some instances. To maintain this process not only cordials, but nourishment is given, such as the patients stomach can bear; which in many cases is strong soup.

" Under this treatment most commonly the violent symptoms and not very rarely all the appearance of disease have subsided. When relief has thus been obtained the diaphoresis must not be suddenly checked, nor must the patient be hastily moved from his bed. The skin should be allowed to dry gradually, or if very much loaded with moisture should be frequently wiped and rubbed; but the patient should not be removed nor the bed cloaths shifted till the third day.

" The administration of the articles mentioned has been regulated not merely with a view to promote diaphoresis. They are also thought necessary to excite the actions of the heart and large vessels and to produce warmth. In proportion to the necessity of the case, the strength and quantity of these articles have been increased or diminished. In many cases very mild cordials assisted by external heat and cloathing have been found sufficient to effect the purposes desired; in others the most bold and liberal use of the strongest cordials has been thought necessary; they have been borne in very large quantities, and it is said that life has appeared to depend on their effects. In administering medicines of this description the quantity has not been regarded; the practitioner has measured the use of them only by their effects. In cases of extreme coldness, great torpor and frequent vomiting, ardent spirit has been given undiluted; and when it would not remain on the stomach if given cold, it has been made hot. Under such circumstances a quart of brandy has been given in twelve hours. It should however be noticed that some of our correspondents who have been very conversant with the disease protest strongly against this liberal use of cordials; and believe that much injury has been produced by them. In the lethargic state, which is, it is said 'the death state of the disease, unless a speedy change be produced,' tincture of opium has been thought eminently serviceable. In cases which have been thought desperate, fifty to a hundred drops of this tincture administered every half hour "have almost invariably removed the lethargy." When deglutition has been rendered impossible by paralysis, opium has been administered in enemas with the most salutary effects. In cases of spasm also, opium has been given in large doses* with the most happy consequences." p. 146, 7, 8, 9.

* In one case a scruple was given in the course of three hours; in another forty-two grains in forty-eight hours.

Vesication on the back of the neck, or on the head, forehead and temples, has been followed by the most decidedly good effects. Blisters over the stomach have very successfully been employed to check incessant vomiting, and generally to remove the morbid irritability of that organ. The bark is too slow in its operation; what little use has been made of it, was attended with some benefit. Preparations of quicksilver have been exhibited, more particularly by a gentleman in Worcester, and relied on in cases where life was not immediately threatened. The quicksilver was combined with camphor, ipecacuanha, and opium. "This mode has been pursued until a slight affection of the salivary system has been produced. The success attending this practice certainly was not exceeded by that of any other; and, while pursuing it, the very liberal use of cordials has not commonly been found necessary." p. 151.

We pass over the accounts respecting the disease in other places. Its appearance in Connecticut in 1808-9, was taken notice of in the former number of the Register.* For the learned disquisition on the name and character of the spotted fever we must refer the reader to the report itself.

As to the *predisposing* causes of this disease the committee do not take upon them to pronounce an opinion. They however expressly assert, that the suggestions that bad grain has been in any measure influential in producing the disease, are not corroborated by any evidence which they have received. The *exciting* causes appear

* Vide the review of Dr. Strong's Dissertation in the Register for July. p. 87—95.

to be much better known. Errors in diet, exposure to sudden changes of temperature or to damp air, fatigue, watching, anxiety of mind, &c. are among the number mentioned.

To the report is subjoined the history of sixteen cases of the spotted fever, with a detail of the morbid appearances of six cases ascertained by dissection. These are extremely interesting and greatly enhance the value of the publication.

The second and concluding article of the present number is a dissertation on the progress of medical science, in the commonwealth of Massachusetts, by *Joseph Bartlett*. The circumstantial account which is here given of the increase of medical knowledge in the state of Massachusetts will be perused with much pleasure by every one who feels an interest in the prosperity of our literary and scientific institutions. We sincerely hope that this example set by Dr. Bartlett may be followed in this and other states of the union.





DOMESTIC INTELLIGENCE.

Description of the FEZZAN RAM, lately imported into New-York.—In a letter from Dr. MITCHILL to ROBERT R. LIVINGSTON, LL. D. dated New-York, August 27, 1810.

(See the annexed engraving, by Anderson.*)

DEAR SIR,

George Davis, Esq. one of our consuls for Barbary, has just returned from Tripoli. He has brought with him a singular sheep, who is safely landed, and the only survivor of several which that enterprising and patriotic gentleman attempted to introduce among us.

This creature has been the subject of so much conversation, that I have thought it worth while to view

* This ingenious artist was formerly a practitioner of medicine of this city. Having qualified himself by a regular course of studies at the medical school of Columbia College, he received the degree of Doctor of Medicine, in 1796, on which occasion he defended an interesting inaugural dissertation on "*Chronic Mania*." He then entered upon the duties of a profession of which he promised to become a distinguished member. The natural disposition of his mind, however, led him to abandon the practice of physic, and to direct his attention to a most useful and agreeable employment, that of engraving, particularly on wood. The numerous evidences he has already given of his proficiency in this art, by the execution of a History of Quadrupeds, which he published in 1804, besides many others which might be mentioned, fully justify all that has been said of this self-taught artist. The engraving which accompanies the present article, may be examined, we believe, as a specimen by no means unworthy of our American Bewick.

THE EDITORS.

him at pasture in Bloomingdale. Mr. Jarvis, our distinguished and excellent portrait-painter, made a sketch of the form, while I noted the characters by which it appeared to differ from most other sheep I had seen.

Looking up to you as the great merino-chief in these parts, I think you are entitled to early and correct information about every thing of a pastoral nature. I therefore forward you a figure of this animal, as done by Mr. Jarvis, from the life. I also send a sample of the fleece, which I was obligingly permitted to take. And I annex to the drawing and the specimen, a few words of description which will probably enable you to comprehend the breed to which it belongs.

This ram is a fine one of his race ; and of a variety, as I believe, not described by European zoologists. He is tall, and his long legs are covered with short hair. He has but two horns, which are spiral, and small for a male of his size. His front has a noble aquiline curve. There is a considerable tuft of his coating below his throat, and near his breast. There are fawn coloured and dark spots about his face and ears. The tail is slender, and reaches several inches below the heel or gambrel joint, being covered with short hair like the legs. The covering of his body is white hair, beneath which appears as you open it, a fine portion of wool or fur. The ears are pendulous. There is a groove or furrow in an oblique direction down the nose from the inner angle of the eye. But what is more remarkable than all is, that he has a *scrotum duplex*, and the testes instead of being inclosed in one skinny purse, are contained in two distinct pouches.

These, except the latter, are marks belonging to the **ADIMAN**, or *Sheep of Africa and India*, whom Buffon describes as being "a large race, with coarse hair, short horns, hanging ears, and a sort of dewlap and pendants under the neck." This breed of the sheep, like all others, is subdivided into varieties, several of which are known to naturalists under the name of the *Senegal Ram*, the *Guinea Ram*, the *Angola Sheep*, and the *Barbary Sheep*.

The abovementioned distinguished naturalist of France, considers the **ADIMAN** as that variety of the domesticated sheep which approaches nearest to the state of nature, or to the wild *Mouflon*, whence he supposes both it and all the other tame species are descended. And he infers this from its size, strength, activity, and ability to subsist with less protection from man.

It ought however to be considered, that there are some varieties of the sheep not yet recorded in the books.—This appears to be one. And this ram, as an individual of a curious race, deserves to be carefully observed. The *divided cod* is a very striking peculiarity. And among sheep, as in dogs, neat cattle, and swine, new varieties are constantly forming. I hope some of our breeders will feel encouraged to make trial of his powers by crossing with the common ewes.

Yours, with high consideration and respect,

SAMUEL L. MITCHILL.

Letter from the Hon. R. R. Livingston to the Hon. Samuel L. Mitchill,
in answer to the foregoing, dated, Clermont, 9th Sept. 1810.

DEAR SIR,

I thank you for your drawing and description of the Fezzan ram. I had before received from Mr. Davis and Mr. Dey samples of his fleece, but accompanied by no description of the animal. I from thence conjectured that he was probably the *Ovis Aries Guineensis*, or a cross between that and the Barbary sheep, because I found his wool much longer than that of the Guinea sheep that I had seen, as well as less fine. The Guinea sheep, at least such as I have seen, (one of which I now have) is without horns. The coat of hair is short, close, and fine, very like that of a horse. Beneath this, as the winter approaches, is formed a covering of short wool which is finer even than the wool of Spain ; nor is the sheep so large as the Fezzan ram, though larger than our common sheep. The ram you describe is, however, sometimes called the *Ovis Aries Guineensis*, as forming one species of it, but is, properly speaking the *Adiman*, or ram of *Angola*, which is thus described by *Valmont Bomare* : “ *Adiman, ou Adem-Mim, cn nomme ainsi une grande race de brebis a poil rude, a cornes courtes, a oreilles pendantes, avec une espèce de fanon ou de pendans sur le cou. Elle habite les contrées le plus chaudes de l’Afrique et des Indes ; elle est connue des naturalistes sous le nom de Belier de Senegal, Belier de Guinie, brebis d’Angola. Elle est domestique et sujette a bien des variétés. Elle est plus grande, plus fort, et plus leger, et par consequence, plus capable qu’aucune autre de subsister par elle même,* ” &c.

With its present coat, I do not see that it will be of any use except it be to raise a large race for the butcher ; it is possible that by crossing with fine wooled ewes, the hair may be eradicated. I am now making the experiment upon the crossing of a Guinea with a Merino sheep, though I have no great hopes from it. I have before me the several publications you mention. Dr. Mease's account of his sheep, &c. has set me to run over the book in which you saw the weight of all my fleeces entered. I have drawn from it several very important conclusions, which I had not before made, and as the entries were noted under the inspection of the most respectable witnesses, and some very jealous sheep-breeders, any mistake was next to impossible. I have sent them to Dr. Mease to shew that he has inadvertently done injustice to my flock, which is of little consequence to me, but of much to the public, who are deeply interested in knowing what a treasure they possess in sheep, who not only give the *finest*, but when duly improved, the *heaviest* fleeces in the United States. In enumerating my rams' fleeces he has omitted Jason's, that averaged 11 lb. 11 oz. He states the weight of my ewes' fleeces at from *four* to *five* pounds, when in fact the general average of *all* my full bred ewes at the last shearing was five pounds thirteen ounces. These facts, with what I shall add, are very important, since they carry with them the most conclusive evidence, that the merino sheep of the improved breed, actually give *more* wool than such of the long wooled sheep which have as yet been publicly exhibited in the United States. No gentleman that I know of, has imitated my practice and published the average produce of their *whole* flock, but have generally stated the produce of a few selected sheep. To compare mine with theirs, I must therefore

follow their practice, and select an equal number from my breeding flock ; the result will be greatly in favour of the Clermont merinoes. Eight of Col. Taylor's fine ewes are stated to have given sixty-two pounds and a half of wool. Eight of my ewes, having lambs at their sides, gave as follows :

No. 1	-	-	-	-	-	-	8 lb. 12 oz.
2	.	.	.	.	.	8	6
3	.	.	.	.	8	4	
4	.	.	.	.	8	0	
5	.	.	.	.	8	0	
6	.	.	.	.	7	14	
7	.	.	.	.	7	14	
8	.	.	.	.	7	12	
							<hr/>
					64	14	

which is nearly eight pounds two ounces average. The average upon twenty-four of Col. Taylor's long wooled sheep was a little more than five pounds. (It is not said whether they were all ewes.) This falls short of the general average upon *all* my full-bred ewes thirteen ounces per head, and is not equal by some ounces to that of my whole flock of the full and mixed merino-blood ewes, to the number of two hundred and thirty-eight. The average on ninety-six ewes and four rams of different grades, was six pounds ten ounces. There are few flocks of long wooled ewes in England that yield a greater average weight than this. And considering how much cleaner they are than the French flocks that feed on fallows and are folded at night, they do not fall far short of the Rambouillet flocks. Mine never run on any but the cleanest grass grounds, are never folded in summer, and during the winter are plentifully supplied with litter. As the inferior grades have lighter fleeces than the full bred, I have no doubt that when my whole flock are seven-eighths,

and upwards, they will average upwards of seven pounds, particularly when I have a sufficient number to begin to sell off the worst, as is commonly done at Rambouillet. Already, taking the weight of the fleeces of *one third* of my full bred and seven-eighth ewes, I find that at the last shearing they yielded me one with another *seven pounds three ounces and twelve penny wt.* And as they are in a progressive state of improvement, owing to their advance in blood, and the selections I can now make of rams, I have no doubt that if they meet with no misfortune, they will at the next shearing yield a greater quantity of fine wool than can be shorn from any long wooled flock of equal numbers in the United States.

That the wool is of the first quality is allowed by all that have compared it with the samples of wool that have been produced from various flocks, and even with the celebrated wool of Dr. Parry, which is, like mine, much longer than that of any of the sheep imported directly from Spain. Dr. Mease was so kind as to shew some samples I sent him in the year 1809 (since which the staple has improved) to the members of the cattle society at Philadelphia, who all (as he writes me) declared that they never had seen such beautiful samples; that it had a length, a silkiness, and a wavy appearance which they had not found in any other. And indeed, this might have been inferred not only from the avidity with which it is purchased by manufacturers at two dollars the pound in the grease, but from its being equal to that of any imported Rambouillet sheep, and in some individuals finer: and these sheep are admitted to have the finest as well as the heaviest merino fleeces in Europe. The estimation in which they are held may be inferred from a letter which I have lately received from Mr.

Delessert, (who sent over Don Pedro and keeps a very fine flock near Paris.) In this letter he informs me that the price of the pure merino sheep in France is from two hundred to three hundred franks, but that choice rams of the Rombouillet stock sell as high as fifteen hundred pounds. It is a very extraordinary fact that the price of these sheep, has been rapidly advancing as the numbers of imported merinoes and those bred from them have increased.

You wrote to me on the subject of sheep, and you see my dear sir I have repaid you with interest. But you know that since I have relinquished political pursuits, I have become more ardent in those in which an old man may be indulged, and by which he may possibly render himself useful. Among these you may rank my desire of improving the manufactures of our country, and as the basis of them, the improvement of our sheep. To this end it is necessary that every prejudice should be removed, and our farmers convinced that the merino sheep, by care and attention in the choice of their rams, may be made to produce *more fine* wool than they can obtain of *coarse wool* from other races. I draw this inference from my own flock, because I know too little of any other to speak with certainty, and because I can refer to your evidence, and that of a number of the most respectable witnesses, for the accuracy of my statement. I am to thank you for your analysis of the Schooley Mountain water, and your pleasing and philosophical account of the country in its vicinity.

I am with much esteem, dear sir,

Your most obedient humble servant,

ROBERT R. LIVINGSTON.

SAMUEL L. MITCHILL, Esq.

The Yellow Fever of Brooklyn in 1809.

The following remarks of Dr. Rodgers on the report of Dr. Gillespie, published in our last number, are taken from the "New-York-Medical and Philosophical Journal and Review," in which work Dr. Gillespie's Report was given as an original article, without acknowledging the source whence it was copied. Subjoined is Dr. Gillespie's answer to Dr. Rogers, and some observations by the Editors of the Register close the subject.

*To the Editors of the New-York Medical and Philosophical
Journal and Review.*

GENTLEMEN,

Being informed that you will insert in your Journal of this month the report of Dr. Gillespie on the yellow fever which prevailed at Brooklyna in the summer of 1809, and published in the Medical Register, I have taken the liberty to make a few remarks on the variance of facts, as stated in that report and the one made by me to the Board of Health last autumn—and to confirm what I had before advanced.

Dr. Gillespie says, that the Concordia sailed from Havanna about the beginning of June, "at which place," he is "credibly informed by three respectable persons now in this city, the yellow fever raged all last winter and spring," &c. To this I reply, that the Concordia left the Havanna the 28th of May; and, without impeaching the credit or veracity of Dr. G.'s informants, declare, that, from the affidavits of ten masters of vessels, sailing at different times from Havanna, it appears that the Havanna was perfectly healthy the whole of the months of March, April, and May. I have even one affidavit of Havanna being healthy on the 2d of June, and of its being so on the 12th, though it was then sickly among the shipping. This intelligence of the shipping being sickly made us interdict the communication between Havanna and New-York before it was sickly ashore. If Dr. G.'s informants are right, then have ten masters of vessels deliberately perjured themselves; but we are not to suppose this latter circumstance. And yet Dr. G.'s informants still have related what they heard, though their information might have been incorrect. It

is from the oaths of masters of vessels that I have said, and do believe, that the *Havanna* was healthy when the *Concordia* sailed.

In order to inculpate shipping, Dr. Gillespie says that, of the patients first taken, “*eight* can be traced to persons having connection with different ships.” This is the truth, but not all the truth : these persons had worked on board of ships, *but not of infected ships*—the ships they had worked on board of were the *Alligator*, the *Brutus*, and the *Phœbe*, neither of which was sickly, or had come from any foreign port, or had impure materials on board. *Not one of them had been on board of the Concordia, or had any connection whatever with any one who had.*

Dr. G. goes on to state, that Mrs. Spencer died on the 10th of July, and was a sailor’s washerwoman, “and died in one of the dwelling-houses nearest the *Concordia*.” No particular use is made of this observation, nor any direct inference drawn from it : the reader may, if he please, suppose that Mrs. Spencer washed some clothes of the *Concordia*, or had been on board—neither was the fact—she never had any connection with the ship. Mrs. Spencer was the wife of a man belonging to the navy-yard, and washed clothes for the seaman belonging to the *Wallabout*. On her death-bed she was asked if she had been on board of any ship ? She replied, that she had been on board the *Brutus*, to inquire for a man for whom she was bound, but no other, and had only stepped on to the deck and directly back again. Now, the *Brutus* did not lay near the *Concordia*, and was healthy ; nor did the proximity of Mrs. Spencer’s house to the *Concordia* do her any harm. There were houses and shops, constantly worked in, much nearer the *Concordia* than Mrs. Spencer’s. It deserves to be remembered, that the people living in the houses and shops nearest to, and *immediately facing the Concordia*, and having most communication, *nay, the only people of the village who had communication with this ship*, were wholly and entirely free from disease.

The last point of variance of fact between Dr. G. and myself is respecting the persons who had communication with the *Concordia*. In the 8th page of his letter, and last paragraph, he says, that “it does not appear that any of them went down into her hold, or remained any considerable time in the cabin, or eat or slept on board.”

It has been shown in my report, that the *mate* and *three* seamen lived constantly on board, eat and slept there, and continued well. It appears also, that at least *twelve*, if not more masters and mates of vessels, were in the habit of going very frequently on board, and that they often staid till late at night, so as to make long visits, and stay a considerable time aboard. These were all in the cabin, and the strong probability is, that they eat and drank very often on board: these all continued well. Let it not be said that they took infection to the village of Brooklyn—they did not live in Brooklyn, but went directly to their houses in New-York, and their families all continued well. It appears that *two* men cleaned out the limbers of the ship, and if there had been any filth in the ship would have suffered first: they have continued well. The wharfinger and his son were often on board, in the cabin. It appears then, that *twenty* persons at least were very frequently on board at Brooklyn, and not one has suffered. More than *seventy* persons had communication with the Concordia from the time of her arrival at New-York till her leaving Brooklyn, and have continued well. Although no one pretends that any injury arose from Nathaniel Mullen, yet a certificate is given respecting him, to prove the importation of his disease. Mr. Barker states, that Mullen told him, during the short time he saw him, “that he (Mullen) had the fever which he brought from Havanna.” Nothing is said of Mullen previous to this. We know, however, that Mullen was in perfect health the whole of the voyage, and till the 29th of July. He left the ship directly coming to New-York, and, after a week of carousing, and spent in the usual apartments of sailor lodging-houses, he returned to the ship on the 28th of July, *excessively drunk*. He was in that situation all that day, and lay on the open deck, exposed to the heat of the sun; the night after, still intoxicated, he lay on deck exposed to the air and dew. In the morning of the 29th he awoke with a violent and raging fever. From such violent exciting causes we, of necessity, expect violent effects. On the 30th, without any proper attempts, that we know, to help him, he was taken to Mrs. Smith’s, at Brooklyn, and there he died early on the morning of the 31st. With this state of facts before our eyes, and with such a knowledge of the predispositions of the patient, and of the exciting cause of his disease as we now have, we must conclude, that it would be next to a miracle if he had possessed his reasoning powers when he spoke to Mr. Barker. It appears, by the certificate of this person, that he was under great apprehension of danger, and refused to go a second time into Mullen’s room, which he had been in but for a short time. It is very presuma-

ble that his state of mind and shortness of visit made him misapprehend what Mullen said to him. It deserves notice too, that nothing of this kind was said either to the physician or nurse, who were with him constantly.

But Mullen could not have brought the disease from Havanna in his own person : he had been thirty days and more from the Havanna, and during that time been perfectly well. Now, it is allowed that febrile contagion will not rest on a clean and healthy subject so long a time without showing itself—the theory of our health laws, and the practice founded on them, is in conformity with this opinion.

Upon the whole, it appears that no evil whatever arose from Mullen, and that no charge against the Concordia is substantiated ; for she had no foul or impure materials on board—no person who had ever communication with her, either at New-York or Brooklyn, was in the slightest degree indisposed ; nor had any of those who died at Brooklyn any connection with any person who visited her.

I have abstained from any other remarks on Dr. G.'s letter than what were immediately connected with my report. I refer the candid reader to the report of the Brooklyn Board of Health of last summer, the letter of Dr. E. F. Smith, and the report made to the Board of Health last autumn.

With respect, I am gentlemen,
Yours, &c.

August 22, 1810.

JOHN R. B. RODGERS.

*To the Editors of the American Medical and
Philosophical Register.*

GENTLEMEN,

I have just seen in the last number of the New-York Journal a letter from Dr. John R. B. Rogers, formerly health officer of this city, in which that gentleman has undertaken to “make a few remarks on the variance of facts,” stated in my late report to the board of health on the yellow fever which prevailed at Brooklyn in 1809 and those in his own report on the same occasion

and to "confirm (as he says) what he had before advanced." After an attentive examination of this letter, I feel it to be a duty which I owe to the public, to the cause of truth, and to my own character, to answer it through the same medium which contained my report.

Long before that report was completed I had seen and considered the report which had been made by the health officer for the purpose of vindicating himself from the charge of negligence, in permitting the ship Concordia to leave the quarantine ground before it was safe and proper ; a vindication, which, it must be allowed, was looked for by the citizens of New-York after their Board of Health had determined that it was necessary she should return again to that place, in order to be cleansed. How far the health officer succeeded in that vindication, I was perfectly willing to leave every reader to judge for himself, unbiassed by me. In my statement of facts, I therefore passed over the doctor's report unnoticed ; certainly believing that in so doing, I was consulting his tranquillity, and little imagining that he would ever think of entering into a controversy with me on this delicate subject. I have, however, been mistaken. The doctor persists in his former assertions, and he treats all evidence that disproves them, with a levity, more suited to a less important occasion.

In my answer to Dr. Rodgers I shall be as brief as the subject will permit, and with this view, I shall confine myself to what only, I consider facts of moment ; leaving less interesting ones unnoticed.

That the yellow fever prevailed in the village of Brook.

kk

lyn in the summer of 1809, and did not prevail in the city of New-York, eight hundred yards distant, across the river, is a fact now admitted by every one. The only question, therefore is, whence did this fever originate? In Brooklyn; or was it imported thither, in the same manner that small pox and other contagious diseases are imported? On this question, Dr. Rodgers and myself are at issue, before the public; he asserting that it originated in that village, and I being fully of opinion that facts shew it was brought there from abroad.

In my report to the board of health I stated, that the ship Concordia lay at a wharf in Brooklyn near which the disease first appeared, and to the neighbourhood of which it was almost exclusively confined; that the Concordia was from the Havanna; that the yellow fever "prevailed" at the Havanna, when she left it, as well as for four months before; and lastly, that the very first case in Brooklyn had been traced to one of the hands of the Concordia, who died with it, and who declared in his last illness that it was the yellow fever which he had brought with him from the Havanna. Such are the facts which I have stated in my report, and on which I rely. Can Dr. Rodgers disprove them? If he can, he may felicitate himself on the success of his efforts; if he cannot, the conclusion, to my understanding, is inevitable. Let us proceed to these facts in the order in which they stand.

First. The Concordia lay at a wharf near which the disease first appeared, and to the neighbourhood of which it was almost exclusively confined. The Concordia lay at Sands' lower dock, and I have been at the trouble to procure a reputable surveyor to make a survey, and even

a map of that dock and the adjacent neighbourhood, in which the fever prevailed ; from the inspection of this map now in the possession of our board of health, it appears, as stated in my official report, that "the disease was, from beginning to end, almost exclusively confined within a circle of two hundred yards diameter from the Concordia."

Secondly. The Concordia was last from the Havanna, which she left on the 28th of May, and arrived here on the 17th of June ; these are facts admitted by Dr. Rodgers himself.

Thirdly. The Havanna was a sickly port when the Concordia left it. On this very important fact the doctor and myself are at issue ; I asserting that the yellow fever prevailed at the Havanna all last winter (1809) and spring, until the time when the Concordia left it, and Dr. Rodgers asserting, "on the affidavits of ten masters of vessels, that the Havanna was *perfectly healthy*, the whole of the months of March, April and May ;" and on the affidavit of one, "that it was so on the 2d and 12th of June ;" though he admits "*it was then sickly among the shipping.*" It is of the last importance to the question before the public to ascertain which of us is correct. I cannot but lament that the doctor has contented himself with barely stating the amount, or rather his ideas of the amount of the ten affidavits of these ten captains, without affording us the sight of a single one of them, that we might read and judge for ourselves ; because it sometimes happens that oaths as well as narratives declare one thing and mean another, which is often discoverable on a little examination. Besides, the oaths of sea captains under the dread of performing quarantine and deter-

mined if any way possible, and almost at all hazards, to avoid it, are certainly no better than the oaths of partial and highly interested witnesses, and always to be received with suspicion. And that they ought to be so received has been proved in every case of this sort I have ever seen investigated. Again; these oaths can at least be but negative. The disease might exist at the Havanna and the captains never hear of it, or hearing, might not believe. Lastly, the law as it stands, leaves an opening for the captains to swallow their oaths with tolerable safety, by the loose terms in which it is couched. It does not require them to swear that the yellow fever did not *exist*, in the port, at their departure, but that it did not "*prevail*" there. Now what is *prevailing*? Does it mean that the disease extends itself over the whole place, or what does it mean? Ask these ten affidavit-makers and they will probably give you ten different opinions, and every man swore according to his own. Such is the nature of the testimony, of which Dr. Rodgers relates, at second hand, the *amount*, according to his conception of it. Is it such, I ask, as ought to satisfy the public?—Let us turn to the evidence on the other hand.

In the first place I present that of Muller; a species of evidence, which even in courts of justice, and in capital cases, is received with equal solemnity, and considered as entitled to equal credit as if delivered under oath. Muller before his death, told Mr. Gilbert Barker, that "he knew he should die, for he believed *he had the fever which he brought from the Havanna.*" Here is the evidence of one under the awful impression that he was soon to launch into eternity, and who could have had no earthly motive to deceive any body on this point. It is full, plain,

and explicit. Let me ask if it be possible to believe that this dying man could have made use of the above words, that he could have supposed he had brought the fever from the Havanna, if no fever was there at the time he sailed? This evidence alone must overpower the most obstinate incredulity.

But in confirmation of this evidence of Muller, I now introduce the following letter of a gentleman of this city, who happened to be at the Havanna at the period in question, and who therefore is qualified to speak, of his own knowledge, as to its precise situation.

New-York, Sept. 13th, 1810.

SIR,

In answer to your inquiries respecting the health of the Havanna in the spring and summer of 1809, which you formerly put to me and now repeat, I have to inform you now as I did then, that I was at that place from the 17th January to the 23d May, during which period several Americans died at different times, after a few days of fever, which we, Americans, believed to be, and called the *yellow fever*; but no alarm was occasioned thereby. On the 23d of May, I left Havanna, and returned there the 16th July, when I found the fever had increased, particularly among the shipping, and the alarm had now become great, owing to the number of sudden deaths and the warmth of the weather. On the 23d July, I left the Havanna.

During the above period, from January to May, several Americans, and some of my own acquaintances, were on the list of deaths, and it cannot be denied that they died with every symptom of what we here call the *yellow fever*.

With respect your obedient servant,

Dr. GILLESPIE.

A. J. ADRIANCE.

On this letter I shall make no comments. None can be necessary. It is precise, positive and satisfactory. That the yellow fever then, prevailed at the Havanna before,

and at the sailing of the *Concordia*, I consider as now established beyond contradiction. Dr. Rodgers may still assert, if he chuses, that it was "*perfectly healthy*" at that period, and if he can find people willing still to believe the assertion, in the face of evidence to the direct contrary, he is perfectly welcome to the benefit of such adherents.

The next fact of importance on which we are at issue is the statement I made, that Drs. Ball and Wendall had certified in the public papers, that "of their patients *first* taken, (and they had observed the *first* case,) *eight* could be traced to persons having connection with different ships." Dr. Rodgers now changes this into a certificate made by myself, and this he does with the express view of charging me with a suppression of truth, for the purpose of "inculpating the shipping." "This," says he, "is the truth, but not *all* the truth." If there is a suppression chargeable to any one, Dr. Rodgers could not be ignorant that it is to Drs. Ball and Wendall, and not to me, who have made no certificate whatever. But since I am engaged, once for all, as I hope, in discussing this subject, I will answer for these gentlemen, and shew that, in *this* instance at least, neither have they been guilty of suppression.

Dr. Rodgers proceeds to make out his charge thus: "These persons had worked on board ships, *but not of infected ships*—the ships they had worked on board of were the *Alligator*, the *Brutus*, and the *Phœbe*, neither of which was sickly, or had come from any foreign port, or had impure materials on board. *Not one of them had been on board of the Concordia, or had any connection whatever*

with any one who had." If, then, I can understand the doctor, the criminal suppression consists in Drs. Ball and Wendall having omitted to declare that the ships were *not infected ships*, which the doctor himself very fearlessly does. I here sincerely confess myself at a loss how to proceed, or in what terms to express myself. What? does Dr. Rodgers venture to hope that he can dispose of important facts in this unceremonious manner? How can he assert that "not one of the first eight cases had any connection whatever with the *Concordia*," when the very first of the eight, Muller, was one of her hands, who was carried ashore with the fever upon him, and died of it? Nor is he correct in asserting that neither of the three other vessels mentioned had any impure materials on board. If we turn to his own report to the board of health, we shall there find that two men were taken sick working on board the *Phœbe*, and that one of them charged her with having *foul ballast*; in which, to be sure, he thinks the man must be mistaken, but as to which many others might think very differently. For my own part, I must be allowed to believe that the man who was made sick by foul ballast, must be more likely to know whether it was foul or not, than the health officer residing at Staten-Island, who never saw it; nay, who, in his report, confesses, in so many words, that he "was not prepared to say what was the state of her ballast at the time the two men worked on board." And yet he now so far forgets himself as to assert positively that there were "*no impure materials on board.*" Let me, then, ask what becomes of the doctor's charge of suppression? Of the four vessels named, as being those to which the first eight cases are traceable, one is shewn, at least, to have had foul ballast in her hold; and the other is proved to have come last

from a port where the yellow fever prevailed at the time of her departure ; one of whose hands was first seized with it at Brooklyn, and died with it in its worst forms. And now I am charged with keeping back part of the truth for the purpose of inculpating the shipping, because I did not add, what I did not believe, nor can believe, that *none of the shipping was infected.*

The first case among the inhabitants was that of Mrs. Spencer, a sailor's washerwoman, who died on the 10th of July, and whose death created some alarm in the village. Here Dr. Rodgers again deals in round assertions, and he heaps one upon another as if he thought that assertions were equivalent to testimony. He tells us that Mrs. Spencer washed for the seamen at the Wallabout, and never washed for any of the seamen belonging to the Concordia, and that on her death-bed she said she had been on board the Brutus once, but no other vessel. The doctor gives us all these assertions, and challenges our belief of them, without even deigning to inform us whether he makes them of his own knowledge, or whether it is only hearsay, or hearsay of a hearsay. I take the liberty of opposing to these assertions such circumstantial evidence as I could procure. The following is an extract of a letter from Mr. Millward, Jun. "I knew Mrs. Spencer, the washerwoman, whose death occasioned the first alarm in the neighbourhood. I was present at the ship Brutus *when she took the mate's cloathing on shore to wash.* Whether she also washed for the Concordia I do not know." This is introduced merely to shew that she did not confine her washing to the seamen of the navy yard. The following is the testimony of Mrs. Spencer's next door neighbour and most intimate friend.

" Eleanor Hubbert declares on the Holy Evangelists, that the following statement which she voluntarily maketh, is, to the best of her belief, true: viz. That she very well knew Mrs. Spencer, as washer woman who lived at the lower end of Fisher's Lane, Brooklyn, near the east river, and who died there of the yellow fever about the 10th of July 1809, during whose sickness this deponent visited her very often; that this deponent doth not know whether Mrs. Spencer washed clothes for any persons of the ship Concordia or not, nor does she believe any person can undertake to say whether or not this was the case, as she believes none were more intimate with her than herself; although she thinks it highly probable she did work for some of the people of that vessel, as this deponent, who then lived within one door of her did, on application from the mate of the Concordia, *wash for him several times*. The house in which Mrs. Spencer lived and died was occupied as follows: below stairs Michael Harvey and his wife who kept a dram shop or tavern; above Wm. Cutler and his wife; in the room adjoining Mrs. Spencer, making in all five persons, of whom four died of the yellow fever: viz. Mrs. Spencer, Mr. and Mrs. Cutter, and Mrs. Harvey, all of them after Mrs. Spencer* who was the first case in Fisher's lane, which soon after became very unhealthy, in consequence of which this deponent and most others removed.

(Signed)

ELEANOR HUBBERT.

Sworn to before me this 19th day of September, 1810. Signed, BEN.
LEDYARD, Not. Pub.

The doctor next asserts, that "the proximity of Mrs. Spencer's house to the Concordia did her no harm." This, with the doctor's leave, is only a very simple method of begging the question. The doctor also asserts, that "there were houses and shops constantly worked in *much nearer* the Concordia than Mrs. Spencer's." Now I am certain, that in this instance, at least, the doctor speaks entirely from hearsay. If he will be at the trouble to inspect Loss' map, deposited in the health-office, he will

* W. Cutter was seized July 16th, and died July 22d. Mrs. Catharine Cutter and Mrs. Harvey died on the 6th of August.

find that he has been imposed upon. He will see that Mrs. Spencer's house is only opposite the way to two wooden buildings under one roof, which alone are a few feet nearer the Concordia ; and he will also find, upon inquiry, that only a single shop was worked in of all those he refers to ; the rest stood unoccupied. The doctor closes with saying, that " it deserves to be remembered, that the people living in the houses and shops nearest to, and *immediately facing the Concordia,*" " were wholly and entirely free from disease." There is but the above double house that can be said " immediately to face the Concordia," and to be nearest to her ; that house was then occupied in one part by a man and his wife, with three children, who all left it soon after the alarm began ; but in the part occupied by M'Gee, four persons were attacked with the yellow fever, and two of them died of the disease. I cannot but hope, therefore, that when the doctor comes to discover that in the facts he thus presses with so much emphasis, the direct contrary of all he has stated is the truth, it will suggest to him the propriety of observing a little more caution how he lends his credulity to the assertions of others, or, at any rate, how he adopts them and gives them to the public as his own.

The last thing I shall take notice of in the doctor's letter, is the ingenious method he takes to escape from the testimony of Muller ; for as to his repeating over again so carefully the great number of people who were on board the Concordia at different times, even were it all true as stated by him, and as I have no doubt was stated to him, I must consider it, and I think every person conversant with the nature of the disease in question will consider it, as of very little moment. In answer to Mr. Barker's cer-

tificate of what Muller said to him, the doctor observes, that Mr. Barker "was under great apprehension of danger," and it was "very presumable that his state of mind and shortness of visit made him misapprehend what Muller said to him." This, to be sure, is a very short and easy way of getting rid of evidence, and if admitted, there is no longer any such thing as proof in existence. But, adds the doctor, "It deserves notice, that nothing of this kind was said either to the physician or nurse, who were with him constantly." It indeed deserves notice, that we have here the doctor's bare assertions once more, and only his assertions ; but neither evidence nor presumption to support it. Who was this nurse, and who this physician ? I should be extremely glad to see them. The physician, indeed, I happen to know, and I also know that from certain motives he will make no disclosures whatever. I only wish he would. If he would tell all he knows, there would soon be an end to all controversy about the origin of this disease in Brooklyn. As to the nurse, I venture to assert that Muller never had a nurse. Indeed, that there can be no room whatever for this statement about the nurse or the physician, appears from the certificates of Mr. Barker and Mrs. Smith, as given in my report to the board of health. Again, I have been assured by Mrs. Smith herself, and also by some other persons, that no one was with him even at the time of his death. While they were conversing below with the physician, a noise was heard in his room ; they hastened up stairs, and Muller was found dead upon the floor, about two yards from his bed, out of which he had risen : one of the most decisive evidences of the disease of which he died. And, after all, supposing, for a moment, that Muller's declaration was not heard by the nurse and physician, it would

be, at best, but negative evidence, and could not invalidate the positive testimony on the other side. But the doctor has an argument in reserve which settles the whole business at a blow, viz. that Muller *could not* have brought the disease from the Havanna in his own person, because he had been thirty days and more from that place. If he *could not*, then it is pretty clear that he *did not*: but is Dr. Rodgers now to be informed, that nothing is more common than for sailors from a sickly place to retain their health during all the voyage, but to become sensible of disease shortly after reaching port and breaking bulk? This is a fact of which, I believe, few medical men are at this time of day ignorant.

However, I now state for the satisfaction of Dr. Rodgers, the following facts, copied by myself from the present health officer's book, which he was polite enough to submit to my examination. The schooner Richard arrived at the quarantine ground July 30th, 1810, from Porto Rico, after a passage of seventeen days, with a cargo of fustick and cotton. She reported that she was from a sickly port, and of course was detained, although, to appearance, she was extremely clean in all respects and in every part. She had lost one seaman on the 20th of July, after a fever of nine days, and two others, who were at the same time unwell, recovered. She was thrown down to be sheathed, and David Bell, one of her seamen, apparently in perfect health, was employed to work upon her, which he did until August 19th, when he was seized with fever, twenty days after his arrival. On the morning of the 21st, Bell was received into the hospital, where he died in about an hour with black vomit and other unequivocal symptoms of the yellow fever. On this case,

so similar to Muller's, I shall merely remark, that whatever may have been pretended of nuisances at Brooklyn, capable of generating yellow fever, no one has ever gone so far, nor I presume ever will, as to impute such nuisances to Staten-Island, always so clean and so salubrious.

On the whole, I must still retain my first impressions: that it is satisfactorily accounted for why the disease in question did prevail in Brooklyn, by the fact that a vessel from a port where the same disease prevailed at her departure, and for a long time before, lay at a wharf in Brooklyn until she was ordered back by the board of health; and on the other hand it is equally satisfactory to account why it did not prevail in New-York at the same time, in precisely the same climate, with precisely the same degree of heat and moisture, and certainly with streets and wharves far less cleanly, namely, because neither that vessel nor any other similarly situated was permitted to approach the city.

I have now disposed of every thing I thought at all material in Dr. Rodgers' letter to the editors of the Journal and Review, and will thank you, gentlemen, to give that letter a place along with this, in your next number, leaving it to the public to decide upon the evidence before them, and the arguments that have been offered on both sides of so highly interesting a question.

I am, &c.

J. D. GILLESPIE.

Observations by the Editors.

Hitherto we have abstained from making any observations on the interesting subject before us; chusing first

to put the reader in possession of all the facts that could be collected by industry on both sides of the question. Those facts are at length presented to the public, and probably some observations may now be expected from the editors.

It must be in the recollection of all who took particular interest in the controversy respecting the origin of the yellow fever in Brooklyn in the summer of 1809, that those who maintain the theory of domestic origin, failing to find any adequate causes for the appearance of such a disease, at such a place, in such a season, denied for a considerable period, that it was the yellow fever, or indeed, any epidemic whatever. It was the common bilious remittent : it was even dysentery ; in short it was any thing, but what it proved to be. To account for the appearance of yellow fever, by appealing to the thermometer to show the high degree of heat, or the barometer to show the great degree of moisture, was here utterly in vain ; because it so happened, that the city of New-York, only separated by a river of eight hundred yards in width, was exposed to the same heat and to the same moisture, and yet continued entirely exempt from the disease. Climate, then, or "*constitution of atmosphere,*" as they sometimes call it, in this instance, at least, as in that of the Wallabout, could have no agency in producing it. It was therefore denied that the disease which was daily becoming so fatal and so alarming, could be the yellow fever. At length, however, facts appeared too strong ; and the existence of the yellow fever at Brooklyn was admitted by every body, with the exception of a single domestic gentleman of the faculty, who still continued to believe it was dysentery. Heat, moisture, and filth being their grand agents to pro-

duce yellow fever in our country, and the two former unhappily failing to account for it, nothing now remained for the domestic theorists but to find out that Brooklyn was a more filthy place than any part of New-York : it being declared by the editors of the *Medical Repository*, that "nothing but an extraordinary assemblage and concentration of nuisances in Brooklyn could account for the prevalence of this disease in a season of such *unprecedented* mildness." Thus a decision was pronounced on evidence afterwards to be discovered. The superstructure was raised, and then materials were to be sought after to lay the foundation. Accordingly Mr. Ephr. Fitz R. Smith, a young gentleman of the faculty, was dispatched to Brooklyn on an errant of discovery ; to lay his hand upon this same "assemblage and concentration of nuisances" wherever he could find it, in the streets, or alleys, or cellars, or yards of Brooklyn. Dr. Smith was successful beyond his most sanguine wishes. He returned and drew up a statement of his discoveries in a letter to the health-officer. He had discovered in Brooklyn "a very crooked lane," leading down to the wharf where the disease first appeared, through which lane the water sometimes ran freely, and sometimes when obstructed, not so freely, as was very natural for water to do : he also saw a cellar of an unoccupied house, which contained animal and vegetable substances, under water to be sure, but still "a fermentative process he says, was so perceptible to the eye, that the surface was covered with bubbles, continually *bursting*, and emitting a gas intolerable to the smell :" on which he takes care to observe to the health officer, that he, the health officer, can readily conceive that "*thousands* of poisonous vapours might exhale from the cellar and not only a small village but a large city might be infected by such a cause." Dr.

Smith also discovered that in the above crooked lane there were several stables very dirty and offensive to the smell ; and lastly, he found a distillery, and, on *inspection*, he declares, he also found that “ the owner of this distillery kept a number of swine which were fed from the gleanings of the still-house, and an *immense* mass of filth lay directly below their pens.” Such is the amount of Dr. Smith’s discoveries, as stated in his letter ; and on this letter Dr. Rodgers appears to place much reliance. Where it of consequence, it would be an easy matter to shew, that, unfortunately for the two doctors, these nuisances, and the cases of yellow fever did not go together. In the house over the cellar, so minutely described, no person lived : in the house adjoining, no person was taken ill : but in the house adjoining that, Mrs. Spencer, who was first seized, occupied the second floor, while those occupying the first floor nearest the cellar, were only taken ill after her death : but neither is it ascertained that the cellar of this house was at all filthy. An important fact, however, which Dr. Smith omitted to state is, that this house stands within eighty yards of the Concordia. Another equally important fact is, that in the house opposite, and a few yards nearer the ship, four persons sickened, two of them died ; although the house (Mrs. Magee’s) had no cellar whatever belonging to it. So much for the fermentative process in the cellar exhaling *thousands* of poisonous vapours. As to the stables and the pig pen, we venture to believe this is the very first time that the yellow fever was ever seriously attributed to such sources. If this be any thing more than fancy we cannot conceal our surprise that in all the livery stables in this city, and in all our slaughter houses with their pig pens annexed, no one, neither master, servant, or visitor has ever yet been suspected to have

caught the yellow fever. One would have thought that his Lancisi would have informed this gentleman better. If he will turn to that learned and industrious writer, he will find that so far from considering such places as the causes of disease, he maintains directly the contrary; considering them as promotive of health. Nor is he alone in this. It is a commonly received opinion.

Next to Dr. Smith's discoveries, Dr. Rodgers places his reliance on the report of the Brooklyn committee of health. "The supposition," he observes, "that the yellow fever might be produced in Brooklyn this season, is strengthened into *firm belief*, when we consider the report of the Brooklyn committee." And as the editors of the Medical Repository (a work so much devoted to maintain the doctrine of domestic origin) also place great reliance on this same report, it may not be amiss to present it to our readers entire.

"The late calamitous situation of this village points out the absolute necessity of removing nuisances of every description, until proper authority be appointed for that purpose. With respect to the nature or origin of the disease, your Committee do not conceive themselves qualified to determine. It may not however be improper to observe, that the machine for cleaning slips, &c. belonging to the Corporation of New-York, was, about the beginning of July, employed in cleansing the New Ferry Slip, and the contents thereof exposed to the direct rays of the sun, which, for some days, emitted so great a stench as to become extremely offensive to the neighbouring inhabitants, and compelled them to apply to the Corporation of New-York for its immediate removal; and also, that several lots and cellars, situated in low places near the New Ferry, were filled with stagnant water, which, from its stench and appearance, must have been collecting for months. It may not be improper to add, that, with one or two exceptions, those persons who were the first vic-

tims to the disease, were such as lived or worked in the vicinity of the abovementioned nuisances, and who were generally exposed to the heavy rains which fell at that period." vol. 13, p. 197.

We confess we cannot but regard it as rather singular, that this report should be seriously adduced to remove our doubts about the domestic origin of the disease, by shewing that the Brooklyn committee believed in that doctrine, when we observe this committee positively declining to give any opinion whatever on that point, and expressly declaring in so many words, that with respect to the nature and origin of the disease, *they do not feel themselves qualified to determine.* After which they mention certain nuisances ; such as the mud machine, and several lots and cellars filled with stagnant water, adding, that the first victims to the disease, *with one or two exceptions,* were those persons who lived or worked in the vicinity of these nuisances. But whether they mean to intimate that these nuisances *originally caused*, or only aided in the propagation of the disease, does not very clearly appear. From their excepting the *first cases*, it would seem they were of the latter opinion. Indeed, it is a fact substantiated in Dr. Gillespie's report, that the mud machine was not in operation at Brooklyn until July 15th ; a fortnight after the first case made its appearance. So much for the evidence to be gathered from the report of the Brooklyn committee of health, in favour of domestic origin. But since the opinions of health committees have been thought so valuable in this case, why may we not also refer to the opinion of the committee of health for this city ? An opinion they had no scruple in declaring ; nor are we left in any doubt as to what it was. The fact of their ordering the Concordia back again to the quarantine ground, there to remain until she was purified, speaks for itself in language

that cannot be misunderstood. It is indeed an emphatic language ; one that can be neither altered nor misrepresented.

But if reliance is to be placed on the testimony of disinterested witnesses, every remaining doubt respecting nuisances at Brooklyn must be dispelled by the certificates of Messrs. Loss, Chichester and Stanton. The first tells us that he visited Brooklyn for the purpose of examining the ground, situation, &c. of the sickly neighbourhood, of which he formed the map to which reference has more than once been made, and that he found "the ground along Front-street, and descending along Dock-street, (which is Dr. Smith's *crooked lane*,) over a sandy soil," and that "Water-street, and that part towards the river, which is the part where the disease first broke out, did not appear to him more filthy than is common in streets adjoining wharves and slips in this city." As to the stables, he says, "he could not perceive any offensive smell, and, in general, the yards are roomy and clean." Mr. Chichester says, that the village, in his opinion, was "as cleanly as in former years." And lastly, Mr. Stanton, an old inhabitant, in answer to Mr. Grave's enquiry as to the relative state of the village, as it respected nuisances, compared with former years, said, "that excepting a quantity of pickled herrings in Sands's store and the sheds near it, (which are not pretended to have caused any mischief,) and the mud taken from the slip, (which, as before observed, was not done till the middle of July, after several cases had occurred,) *the village was as cleanly as it had been for twenty-eight years*, the time he had resided there." After this, we cannot but think nothing more should ever be mentioned about local nuisances.

There is, in truth, no longer any room for the pretence.

Let us return for the last time, and but for a moment, to Dr. Rodgers and the Concordia.

Before the doctor dismisses the Concordia, in order to leave no fact unanswered, he undertakes to consider the argument that had been drawn against this ship from the circumstance of the mate's having poured vinegar upon the ballast for the purpose of cleansing it. It had been supposed that this act of the mate's betrayed his suspicions at least of the foulness of the ship. But this, he says, was after Muller's death, and the mate, " supposing that Muller had *caught* it somewhere, might fear that he had or would communicate it to the ship ; with this apprehension he used vinegar, believing it might destroy all contagion. " Now," says the doctor, " his doing this *then*, and not before, and telling of it, is a proof that he had no idea of any danger or evil being in the ship, except as resulting from Muller alone ; and instead of being against the ship, is in her favour." &c. Turning to the doctor's letter to the board of health, we find it there stated, that Muller returned to the ship from New-York on the 28th, excessively drunk ; that he continued so all that day and the next night, and during all this time lay on the open deck, exposed to the heat of the sun by day, and to the air and dew by night ; that on the 30th he was taken sick, and was removed to Mrs. Smith's, where he died. And here the doctor assures us, with unaffected gravity, that, in his opinion, the mate must have poured the vinegar on the ballast in order to destroy the contagion which he apprehended had been or *would* be communicated from

Muller. Muller lay all the time, after his return from New-York, drunk and sick upon deck, and therefore the mate gets a quantity of vinegar and goes down with it into the ship's hold among the ballast, upon which he pours it, in order to prevent the sick man upon deck from communicating his contagion to the ballast in the bottom of the ship. Really, so far from believing with Dr. Rodgers, that the mate, in all this, acted like a rational being, one cannot but think the poor man must have fairly taken leave of his senses.

It now remains to consider the question which has been more than once put, and with a seeming triumph, on the part of our opponents, namely, how could the disease be imported into Brooklyn and not into New-York? The answer is, because infected vessels were permitted to haul up to the wharves of Brooklyn, but were not permitted to haul up to the wharves in New-York, but were prevented from approaching nearer the city than 300 yards. But rejoin the querists, how is that in the above season many persons who were seized with the fever in Brooklyn, came over to New-York and died there, and that too "in several instances where the patients were lodged in houses excessively crowded, and where filth was deplorably accumulated" * without communicating the disease in any cases whatever? Varying the form of expression the question may be stated thus: why is it, that the yellow fever, if a contagious and consequently an importable disease was contagious in Brooklyn and not in New-York, subject to the same degree of heat and moisture, and even in situations "deplorably filthy"? This question is important and interesting; nor will the answer be less so.

* Medical Repository, vol. 13, p. 199.

A satisfactory one shall be given, and it will be seen in the sequel that the advocates of domestic origin have not, upon their own principles, an inch of ground left to stand upon.

Preliminarily to this answer, we must take occasion to state what we mean by the contagiousness of the yellow fever; an occasion we have long desired in order to put an end to the many misconceptions and misrepresentations of our opinion on this point. By the contagiousness of yellow fever then, we mean the communication of it, *under certain peculiar circumstances*, from one person to another, or from things to persons. By *communication*, however, we do not mean, first, that it is to be conveyed only by touch, like the itch or syphilis; nor, secondly, by touch and through the medium of a pure atmosphere, like the small pox and measles; but thirdly, we mean that it is conveyed from a diseased person to those in health, or from infected materials to persons in health, under circumstances of an atmosphere of a peculiar impurity, and under such circumstances only. "The yellow fever, like typhus, jail, ship, hospital or lake fever, and dysentery, is a disease *only* communicable through the medium of an impure atmosphere; in a pure air, in large and well ventilated apartments, when the dress of the patient is frequently changed, all excrementitious discharges immediately removed, and attention paid to cleanliness in general, these diseases are not communicated, or very rarely so, from one to another. But in an impure air, rendered so by the (presence of a foul or infected ship) decomposition of animal and vegetable substances, such as takes place in low marshy countries, or by concentrated human effluvia, as in camps, jails, hospitals, or on ship-board, they are rendered not only extremely malignant

and mortal in themselves, but become communicable to others who approach the sick, or breathe the same atmosphere which has become assimilated to the poison introduced, insomuch that the same specific disease is communicated, whether it be the plague, yellow fever, typhus, or dysentery."* But neither is it every kind of impure atmosphere that will form a medium for conveying this disease; but it is that kind of impurity which has become "assimilated to the poison introduced by the disease." Hence, therefore, a single person may be ill of the yellow fever in even an uncleanly lodging, but of which the air has not become *assimilated* to the poison of the disease, and if care is taken to change the patient's dress, remove excrementitious discharges, and in case of death to destroy the bedding and purify the apartments, the disease may not be communicated to any others in the house. That this full degree of attention and circumspection was invariably observed by the agents of the health office in this city, in every instance where a case of the yellow fever was brought from Brooklyn, we are fully assured by the agents themselves. The above furnishes, we conceive, an answer, and the only rational and satisfactory answer that can be given to the question that has been put. We are now fully prepared to account why the yellow fever was contagious at Brooklyn, and was not so at New-York. It was because in Brooklyn the atmosphere was affected with that peculiar kind of impurity arising from its being assimilated to the air in the hold of a foul ship, while in New-York there was no such ship, no Concordia poisoning us night and day, by pumping out her foul and infected bilge water.

* Hosack on Contagion. Vide Edinburgh Medical and Surgical Journal, for October, 1809.

Having thus answered the question so triumphantly put by our opponents, permit us with much greater propriety, as we think, to put a similar question in turn to them. We ask then, if filth combined with certain degrees of heat and moisture produced yellow fever in Brooklyn, how did it happen that filth also, nay "*filth deplorably accumulated,*" and combined with the same degrees of heat and moisture in New-York, failed to produce it here? If the advocates for domestic origin will answer this question, without involving themselves in inconsistencies and contradictions, we confess, they will accomplish more than we at present believe they can. If we understand them, they attribute the production of the yellow fever in this country to two sources only, to wit, the state of weather, and the state of the city; they have hitherto maintained that when a certain degree of heat was united with a certain degree of moisture, this state of weather combined with filth, would always produce yellow fever. We have in the case before us all these requisites combined. There was both heat, moisture, and, if they please, filth in Brooklyn, and there the disease prevailed; there was in like manner the same degrees of heat and moisture in New-York that there was in Brooklyn; and as to filth, we have their own acknowledgements that in New-York was "*filth deplorably accumulated,*" and yet in New-York the yellow fever did not prevail. We leave it to these gentlemen to account for this, if they can, upon any principles, or consistently with any theories they have hitherto maintained. Before we conclude, there remains still one question more, and a last one to be disposed of. Our querist, then, shall be allowed to rejoin, a second time, and to ask,

If the yellow fever be a contagious disease, how happens it that such a number of persons exposed to it escape being at all affected? This is the grand argument to which the gentlemen of domestic origin are forever resorting, and on which they seem to place entire reliance; as if they considered it conclusive and altogether unanswerable. We scarcely recollect an instance when the question was in agitation that they have not triumphantly urged this argument upon us. It is, we believe, to be found in almost every discussion of the subject in the *Medical Repository*, numerous as they are. It shall now be answered.

First, then, we say that no disease, yet known to us, is universal in communicating its contagion. The small pox is perhaps the disease which allows of the fewest exceptions; and yet it is a well authenticated fact, recorded by Dr. Lind,* that this disease so far from being universal in its operation when it once broke out among a ship's crew at sea (a situation most favourable to its spread) on board the Royal George; out of eight hundred and eighty men who had never had it nearly one hundred escaped; and the disease quite exhausted itself and entirely disappeared before the ship's return into port. Indeed, were it otherwise, were contagious diseases to be communicated to all within the sphere of their influence, without an exception, the human species would have been extinct, ages ago. The same argument, then, that would prove the yellow fever to be non-contagious, would prove the small pox and every other known disease, to be so.

Again; has it never occurred to these gentlemen that

* *Papers on Infection*, p. 112.

their argument proves too much in another point of view? Has it never occurred to them that the exceptions on which they rely would equally prove that neither is the disease of domestic origin? *We* maintain that the yellow fever is a disease, brought to this country, from some sickly foreign port, and is communicated by persons infected, or by the ship bringing it, to persons in health: *they* say, that this cannot be so, because many persons, exposed to the pretended contagion, escape receiving it. On the other hand they maintain that the yellow fever is a disease of domestic origin, and is produced by miasmata or the filth arising from putrefied animal and vegetable substances which engendering a poisonous atmosphere infects those who inhale it. Now as the same exceptions, precisely, are found here, the disease, whatever may be its cause, is certainly no more universal in its operation in one case than in the other; and if exceptions are evidence of its not being contagious, it inevitably follows, that the same exceptions are evidence of its not being of domestic origin. There is no possible escape from the conclusion. It appears then, that this grand argument, though so often relied upon, must after all, share the fate of all those grand arguments which, proving too much, consequently prove nothing.

To finish in a sentence. We have seen the yellow fever prevailing for four months, in a village within eight hundred yards of the city, while the city remained exempt from it. We have seen that this village was as cleanly as had been customary for eight and twenty years, during which period no such disease was known there, nor was their wharves a receptacle for shipping, forbidden to approach New-York: we have seen a ship at this time lying

at one of its wharves, which ship was last from a port where the yellow fever raged at her departure, on board of which the first case occurred terminating fatally, and in the neighbourhood of which the disease first broke out, over which it spread, and to which it was almost exclusively confined, the few exceptions being traceable to the same source ; during all which time the city of New-York wholly escaped infection. Let the impartial lover of truth now say, whether he thinks Brooklyn generated this fever, or whether he is not perfectly satisfied that it was brought thither in the *Concordia*.

*Recent Arrangements of the College of Physicians.***CIRCULAR.**

At a meeting of the **Senatus Academicus** of the College of Physicians and Surgeons, held at the College buildings, in the City of New-York, on Monday, the 17th day of September, 1810,

It was ordered, that the following extract from the communications of the Regents of the University, signed by Francis Bloodgood, Esq. their Secretary, be published for general information.

At a meeting of the Regents of the University, held pursuant to adjournment in the Senate Chamber, on Monday, the 5th day of March, 1810,

“ Resolved, that the Professor of Anatomy and Surgery, and the Professor of Chemistry, shall each be entitled to receive a sum not exceeding Twenty Dollars from each Student for every Course of Lectures ; and all the other Professors shall each receive a sum not exceeding Fifteen Dollars for their Courses of Lectures respectively delivered in the said College.”

No regulations having been made by the Regents of the University respecting the privileges heretofore extended to medical students, recommended by the Presidents of County Medical Societies, *it is understood that the same are no longer in force.*

By order of the Senatus Academicus,

ARCHIBALD BRUCE, M. D.

Register.

Medical Lectures in Columbia College.

OCTOBER 1, 1810.

The Faculty of Physic of this College, will commence their course of Public Lectures on the first Monday in November, according to the following arrangement.

Anatomy and Surgery, by Dr. POST.

Practice of Physic, by Dr. HAMERSLEY.

Materia Medica and Botany, by Dr. HOSACK.

Chemistry and Legal Medicine, by Dr. STRINGHAM.

Institutes of Medicine, by Dr. OSBORNE.

Midwifery, &c. by Dr. BUCHANAN.

The Clinical Lectures will be delivered by the Professors of the Institutes and Practice of Physic.

The Faculty having discovered that Students of Medicine have been recommended by the County Medical Societies of this State, to attend these Lectures gratuitously, whose circumstances were amply sufficient to have paid for their public instruction, have determined to receive only such students *gratis* as are unable to defray the expences of their medical education, and do therefore request that none others may be recommended, and that this recommendation should always proceed from the society of that county where the student actually resides.

By order of the Faculty,

JAMES S. STRINGHAM, M. D.

Secretary.

Lectures on Surgery and Anatomical Demonstrations.

Dr. MOTT will commence his Lectures on Surgery and Anatomical Demonstration, early in November next. The Trustees and Faculty of Physic of Columbia College having obligingly favoured Dr. Mott with apartments, his lectures will be delivered in that institution. *Fees for attendance, \$10.*

Shortly after Dr. Mott received the honours of the Medical School of Columbia College, he went to Europe, where he resided nearly three years in the cities of London and Edinburgh, during which time he enjoyed the advantages of acquiring much practical knowledge in the several branches of medical science, particularly those of anatomy and surgery. Upon his return to this city in the spring of 1810, he delivered a course of lectures on surgery, which was well received by a respectable class. From the course now announced, which is designed to be much more extensive than the former, and to include the latest improvements in operative surgery, we have no doubt the pupil will receive much valuable information, at the same time that it will prove an important addition to the numerous sources of instruction which are afforded at the Medical School of Columbia College.

Griscom's Lectures on Natural Philosophy and Chemistry.

Mr. John Griscom purposes to give two courses of lectures during the ensuing season; one on *Natural or Experimental Philosophy*, and another on *Chemistry*. In the former course he will be aided by a new and valuable collection of philosophical apparatus, which he has

just received from London. Some addition has also been made to the chemical apparatus. Both courses will be given in the evening.

Appointment in Harvard University.

The honourable, the Board of Overseers of HARVARD UNIVERSITY, have confirmed the appointment of the Reverend JOHN THORNTON KIRKLAND, D. D. as president of that institution, in the place of the Reverend SAMUEL WEBBER, D. D. lately deceased.

*Observations on the Weather of the City of New-York,
for the months of July, August, and September, 1810.*

JULY.

The weather from the 1st to the 6th of this month was of a moderate temperature, clear, and agreeable, wind chiefly from the southward. On the 6th it became cloudy, and continued so until the night of the 7th, when we had a considerable quantity of rain. Much rain also fell on the 8th, accompanied with a strong wind from the north-east. From the 8th until the 15th inclusive, the weather was variable, at times extremely hot and oppressive ; frequent falls of rain, and very little wind. The thermometer was several days as high as 83 at 3 o'clock, in the shade. From the 15th to the close of the month an uncommon quantity of rain fell ; and though the showers were unusually heavy, there was little thunder or wind. The thermometer during this time was generally at summer heat.

AUGUST.

August set in with very little variation in the weather ; the warm and sultry days which were so oppressive the greater part of July were frequently experienced. On the 6th, however, it became clear, the evenings were cool, and refreshing breezes from the south-west ; at mid-day the thermometer varied from 70 to 78, in the shade. This weather continued until the 11th. On the 11th and 12th it became extremely oppressive, during which time we had several showers. On the night of the 13th the rain fell in torrents. The thermometer on the 12th and 13th, at 7 A. M. was 76, at 3 P. M. 83, and at 7 P. M. 77. The two following days were again cooler ; wind northerly. From the 15th to the 21st, overcast, and oftentimes there was rain, the mercury in the thermometer from 66 to 76. On the 21st, a most violent north-east storm, which continued with little intermission all day and night, until 2 P. M. of the 22d. The cellars of those houses situated in the neighbourhood of docks were inundated, and in many other parts of the city the same circumstance took place ; the cisterns overflowed, and the yards were filled with water. Thermometer on the 22d, at 3 P. M. was 70. On the night of the 24th there was another very heavy shower. The wind now changed to the south-west, and though at the early parts of the day the atmosphere was humid, it was not so oppressive ; there was however little wind. On the 30th, the thermometor stood at 7 A. M. at 60, at 3 P. M. 73, and at 7 P. M. at 64. This was lower than on any other day this month.

SEPTEMBER.

We had many clear, cool, and agreeable days from the 2d till the 12th of September. Wind chiefly south-west :

thermometer varying between 69 and 78 at 3 p. m. On the 12th a heavy shower of rain fell, and another on the 14th. It now became cooler, and from the 15th to the 18th we had refreshing breezes from the north and north-west. From the 18th to the 26th the weather was extremely disagreeable. A north-easterly storm prevailed nearly the whole time, though the quantity of rain that fell was by no means great. The thermometer at the same time was unusually low for the season. On the morning of the 24th, at 7 o'clock it stood at 54, at 3 p. m. at 56, and at 7 p. m. at 55. The weather for the remaining days of the month was clear and pleasant. Wind chiefly from the south-west.

*Observations on the Diseases of July, August
and September.*

Upon examining the bills of mortality published by the corporation, the records of the city dispensary, and those of our private practice, we find that the diseases of the last three months have consisted chiefly of *intermitting, remitting, and typhus fevers*; diseases of the bowels, viz. *colic, cholera morbus, diarrhœa, and dysentery*. In each of the three months, we have also observed, and what is unusual at this season, a great number of inflammatory complaints, particularly *catarrh, pneumonia, and rheumatism*; no less than twenty-one cases of the last disease are recorded in the practice of the dispensary alone. Some instances of *haemoptysis* were also met with in our private practice, in which we have experienced great advantage from the active use of cathartics, the practice lately recommended in

various diseases by Dr. Hamilton, of Edinburgh.* Some cases of *ophthalmia*, *cynanche tonsillaris*, and *enteritis*, have also been noticed among our inflammatory complaints; *fluor albus* has also in several instances occurred, and which appears to have been greatly aggravated by, if not altogether the effect of, debility induced by heat. In the treatment of this disease, we have found more benefit from the use of injections of the sulphate of zinc, in the proportion of three grains to the ounce, than from any other remedy we have prescribed; at the same time, however, the usual tonic remedies, viz. cold bathing, general and local, bitters, &c. were made use of. In a late number of the *Journal de Medicine*, an injection composed of the bark of the root of the elm, boiled in red wine, has been very successfully prescribed in the same complaint by Mons. Pingusson.

Phthisis pulmonalis has been attended with its usual fatality within the period mentioned; no less than eighty-five deaths are recorded from this disease alone. Some cases, where the physician has been called in in the forming or inflammatory stage of this disorder, have yielded to the free and repeated use of the lancet, blisters, and emetics; after which exercise, especially a journey into the country at a distance from the sea shore, with a nutritious diet, and the use of bitters, have completely restored the patient to health. But in the majority of cases of this disease which present themselves to the physician, he can do little more than alleviate some of its most distressing symptoms.

Another disorder of a very fatal nature in this climate, especially in the summer and fall months, is the *cholera*.

* See his valuable work on the use of Purgatives.

infantum. From this disease, without enumerating other bowel complaints, eighty-six children have perished within the last three months. Our numerous opportunities of observing this complaint during the past summer, have convinced us of the propriety of considering it as similar to the bilious remittent of adults ; and that it very properly is denominated by Dr. Butter the *infantile remittent fever*. Dr. Mann, of Wrentham, (Mass.) in his valuable prize dissertation on the autumnal diseases of children, which work we earnestly recommend to the notice of every practitioner of medicine, has taken a similar view of this disease ; accordingly, instead of prescribing anodyne and astringent mixtures to lessen the discharges by the bowels, which are probably the effect of the general excitement of the system occasioned by the heat of the season, and frequently the additional irritation of teething, we more rationally direct those remedies which are calculated to allay the general febrile excitement, and thereby to remove the irritations of the intestinal canal. Accordingly, it has been found that the most successful mode of treatment is in the first instance to empty the stomach and bowels by small doses of ipecacuanha and rhubarb. Calomel and antimonial medicines are also frequently prescribed with good effect in this stage of the disease. When the stomach and bowels are freely evacuated by these means, if the fever continues, small doses of ipecacuanha may still be continued with advantage, for the purpose of preserving a perspirable state of the surface of the body. Warm bathing is also at this time made use of with advantage. When the febrile symptoms are removed, weak brandy and water, or port wine and water, beef tea, the liquor of clams or oysters, are most grateful at the

same time that they are most useful in restoring the tone of the stomach and bowels. But if the irritations of the intestinal canal continue after the febrile symptoms are removed, the chalk julep of the dispensatory, with the addition of laudanum or paregoric elixir is very advantageously prescribed. In some instances where the diarrhoea is attended with tenesmus, severe gripings, and the discharges are tinged with blood, small injections composed of starch and laudanum are more effectual in relieving the sufferings of the patient than anodynes administered by the stomach, while they are less apt to disturb the functions of that organ: in other instances astringent remedies are indicated to restrain the profuse liquid evacuations from the bowels. For this purpose we have found none more effectual than an infusion of the root of the marsh rosemary, the statice limonium of Linnaeus.* But of all the remedies prescribed either for the purpose of preventing or of curing this disease, we know of none so effectual as removal to the cool air of the country, particularly near the sea shore, where the atmosphere is not only cooler, but in a peculiar manner restores the appetite and strength of the patient. "It is extremely agreeable, says Dr. Rush, to see the little sufferers revive as soon as they escape from the city air, and inspire the pure air of the country."† But among the means of prevention we also recommend the use of flannel worn next the skin: this preserves the action of the vessels on the surface, at the same time that as a non-conductor, it guards the tender infant from the extreme heat and vicissitudes frequently experienced in the hot season of the year. Warm bathing at this season,

* See an Inaugural Dissertation on this subject, by Dr. Valentine Mott.

† Rush's Med. Inq. and Observ. vol. 3. p. 370.

by lessening the effects of heat upon the system, is no less useful to children than to adults.

As before remarked, *intermitting*, *remitting* and *typhus fevers* have also been among the prevailing diseases of the last three months, and are still daily met with both in our private practice and public institutions. Intermittents have appeared in all their variety of forms of quotidian tertian; double tertian, and quartans. Remittents also assumed their varied character according to the constitutions in which they occurred. In some they manifested all the symptoms of the true *bilious remittent*, in which the patient throughout the whole course of the disease discharged large quantities of bile both by vomiting and stool; while in others, especially those of a sanguine temperament or who may have recently arrived from a more northern latitude, it exhibited all the characters of the "*ardent fever*" or "*causus*." This form of fever from the violence of its symptoms and shorter duration than the ordinary bilious remittent is frequently confounded with the yellow fever of the tropics, and it must be acknowledged that in many symptoms it bears a greater resemblance to that species of fever than to any of the indigenous fevers of the United States: we are therefore not so much surprised that by those who believe in the *unity* of fevers they should be pronounced one and the same disease. In the first number of this work these two forms of remittents have been very happily described by Dr. Norcom, in his account of the fevers of North-Carolina.

In many instances the remittents of the season have terminated in *typhus*, and in some cases have proved fa-

tal. We however are happy to add that our city has enjoyed a total exemption from that occasional scourge of our sea ports, the yellow fever. Although some cases appeared at the quarantine ground introduced by vessels from the Havanna or Porto Rico, and in North-Carolina from the same sources, as we are credibly informed, we believe it will be on all hands admitted, such has been the vigilance of our present health officer, such his rigid and impartial performance of the duties enjoined upon him, that not a single case of yellow fever has been seen in the city of New-York or the village of Brooklyn this season. We believe it must also be granted that we have had all the requisites for the generation of it, that the advocates for its domestic origin have ever considered necessary viz. *moisture, heat, and filth.*

As to moisture, we can safely assert that no season can be mentioned in which we have had more repeated falls of rain or in greater quantities than in the months of July and August. For a period of about six weeks scarcely a day occurred in which we had not one or more showers of rain, insomuch that the docks were overflowed, and the cellars in the lowest part of the city filled with water. The seasons of 1795 and 1798 in which the yellow fever prevailed with a mortality that will never be forgotten, bear no comparison to that we have just passed through. The thermometer also pointed out during many weeks of that time a degree of heat far above our ordinary temperature at this season, and greater in the aggregate than was experienced in either of the above years, as will be seen by examining the tables that were kept. Nor have we wanted the materials for this heat and moisture to operate upon. On the contrary,

we are compelled to observe, that our streets, docks, and market places have never within our recollection, exhibited more subjects of putrefaction both of animal and vegetable matter, than they have in the past season. Peck-slip in particular, is acknowledged to have been in a most offensive condition, insomuch that vessels were not permitted to go into it for fear of disturbing its waters. These have been and continue to be, in a state of fermentation, emitting their exhalations to the great annoyance of the whole neighbourhood. Yet surprising to be told, if yellow fever be the produce of domestic filth, similar causes have, in the present instance, ceased to produce similar effects ; for with the exceptions already noticed, our city has enjoyed an unexampled degree of health.

Godon's Treatise on Mineralogy.

The prospectus of a new work on Mineralogical Science has been lately issued, entitled "A Treatise on Mineralogy, adapted to the present State of Science ; including important Applications to the Arts and Manufactures. By S. GODON." It will be divided into two parts, according to the divisions generally admitted, and followed in the lectures of the author. The first will treat of minerals considered as simples. The second of minerals in their state of aggregation, with their usual disposition on the body of the earth : these two divisions denoted by the names of *Oryctognosy* and *Geognosy*, including the whole series of mineralogical knowledge. The work will also contain a great number of local observations on the territory of North America, either made in the course of the travels of the author, or communicated to him by

respectable authorities. These memorandums will give an additional degree of utility to this publication, and are calculated to render it a *national work*. It will be comprised in two volumes, octavo, with one volume of plates in quarto, and be published by Messrs. Birch and Small, of Philadelphia.

RECENT AMERICAN PUBLICATIONS.

Sketches of a Tour to the Western Country, through the States of Ohio and Kentucky; a voyage down the Ohio and Mississippi rivers; and a trip through the Mississippi territory, and a part of Florida. Commenced at Philadelphia in 1807, and concluded in 1809. By F. Cuming. With Notes and an Appendix, containing some interesting facts, together with a notice of an expedition through Louisiana. Cranmer & Co. Pittsburgh.

A Practical Treatise on Vaccina or Cow Pox. By Samuel Scofield, M. D. &c. 12mo. New-York. Collins & Perkins.

The American New Dispensatory. By James Thatcher, A. A. & M. S. S. 8vo. Boston. T. B. Waite & Co.

The History of Printing in America, with a Biography of Printers, and an Account of Newspapers. To which is prefixed, a concise View of the Discovery and Progress of the Art in other parts of the world. In two volumes octavo, with five Plates, one of which is a *fac simile* of the first articles known to be printed in Europe by the discoverer of the art; two are *fac similes* of the printing types first used in England; another represents cylindrical presses; the fifth is an Indian Gazette. Boston: Isaiah Thomas, jun. 2 vols. 8vo. Price \$6 in boards.

Nos. I. & 2. Archives of Useful Knowledge: a work devoted to Commerce, Manufactures, Rural and Domestic Economy, Agriculture, and the Useful Arts. By James Mease, M. D. Secretary to the Agricultural Society of Philadelphia. New-York. Williams and Whiting.

The natural and civil history of Vermont, by Samuel Williams, L. L. D. member of the American academy of arts and sciences of Massachusetts, &c. in 2 vols. octavo. Second edition, corrected and much enlarged, with a map of the state. Burlington. S. Mills.

The Poems of Ossian. Translated by James Macpherson, Esq. To which are prefixed, Dissertations on the Aera and Poems of Ossian, and a Preliminary Discourse, or Review of the recent controversy relative to the authenticity of the Poems. With engravings on wood, by Anderson. New-York. E. Sargeant.

Report from the Secretary of the Treasury, on the subject of American Manufactures, prepared in obedience to a resolution of the House of Representatives, April 19, 1810. Referred to Mr. Macon, Mr. Pitkin, Mr. Fisk, and Mr. Clopton. Boston. John Eliot, jun.

Papers for 1810, communicated to the Massachusetts Society for promoting agriculture. Published by the trustees. Boston. Russel & Cutler.

The History of South Carolina, from its first settlement in 1690, to the year 1808, in two vols. By David Ramsay, M. D. New-York. David Longworth. 8vo.

Shultz's Travels on an inland Voyage through the States of New-York, Pennsylvania, Virginia, Kentucky, Ohio, Tennessee, and through the Territories of Indiana, Louisiana, Mississippi and New-Orleans, including a tour of upwards of five thousand miles, performed in the years 1806 and 1807. 2 vols. 8vo. maps and plates.

Journal of the Voyages and Travels of Captains Lewis and Clarke, by Patrick Gass, 2d edition, embellished with six engravings. Price \$1. Philadelphia. M. Carey.

An Enquiry concerning the intellectual and moral faculties and literature of the negro, with an account of the lives and works of fifteen negroes and mulattoes, distinguished in science, literature, &c. by H Gregoire, formerly Bishop of Blois, Member of the Conservative Senate, &c. Translated by J. B. Warden, Esq. Brooklyn. T. Kirk.

PROPOSED AMERICAN PUBLICATIONS.

By E. Earle, Philadelphia.—Observations on the Diseases of the Army. By John Pringle, M. D. F. R. S. with copious Notes, by Benjamin Rush, M. D. &c. Philadelphia.

By Conrad & Co. Philadelphia.—The History of the Expedition of Captains Lewis and Clark, through the Continent of North America, performed during the years 1804, 1805, 1806, by order of the government of the United States.

By E. Earle, Philadelphia.—The Eclectic Repertory and Analytical Review, Medical and Philosophical, Edited by a society of Physicians.

By Collins & Perkins, New-York.—The Modern Practice of Physic, By Robert Thomas, M. D. with an Appendix, by Ed. Miller, M. D.

By I. B. Waite & Co. Boston.—Elements of Zoology: or outlines of the Natural History of the Animals. By Benjamin Smith Barton, M. D. Professor of Materia Medica, Natural History and Botany, in the University of Pennsylvania.

By J. Simpson & Co. of New-Brunswick, New-Jersey.—An Essay on the Causes of the Variety of Complexion and Figure in the Human Species; to which are added, Animadversions on certain remarks made on the first edition of this Essay, by Mr. Charles White; in a series of Discourses delivered before the Literary and Philosophical Society of Manchester in England. Also, Strictures on Lord Kaims's Discourse on the Diversity of Mankind. By the Rev. Samuel Stanhope Smith, D. D. President of the College of New-Jersey, and Member of the American Philosophical Society. The second edition, enlarged and improved.

